

Iceland's Networked Society

VISIT...

LANZAROTE
Caliente.COM

The Northern World

NORTH EUROPE AND THE BALTIC C. 400–1700 A.D.
PEOPLES, ECONOMICS AND CULTURES

Editors

Jón Viðar Sigurðsson (*Oslo*)

Ingvild Øye (*Bergen*)

Piotr Gorecki (*University of California at Riverside*)

Steve Murdoch (*St. Andrews*)

Cordelia Hess (*Stockholm*)

VOLUME 69

The titles published in this series are listed at *brill.com/nw*

Iceland's Networked Society

Revealing How the Global Affairs of the Viking Age Created New Forms of Social Complexity

By

Tara Carter



BRILL

LEIDEN | BOSTON

Cover illustration: Map showing the extent of Iceland's global network during the Viking Age and Medieval periods. ©Tara Carter

Library of Congress Cataloging-in-Publication Data

Carter, Tara.

Iceland's networked society : revealing how the global affairs of the Viking age created new forms of social complexity / by Tara Carter.

pages cm. -- (The Northern world, ISSN 1569-1462 ; volume 69)

Includes bibliographical references and index.

ISBN 978-90-04-28913-0 (hardback : acid-free paper) -- ISBN 978-90-04-29334-2 (e-book) 1. Iceland--History--To 1262. 2. Social networks--Iceland--History--To 1500. 3. Complexity (Philosophy)--Social aspects--Iceland--History--To 1500. 4. Vikings--Iceland--History. 5. Globalization--Social aspects--Iceland--History--To 1500. 6. Cosmopolitanism--Iceland--History--To 1500. 7. Iceland--Economic conditions. 8. Norway--Relations--Iceland. 9. Iceland--Relations--Norway. 10. Iceland--Antiquities. I. Title.

DL352.C37 2015

949.12'01--dc23

2015008978

This publication has been typeset in the multilingual “Brill” typeface. With over 5,100 characters covering Latin, IPA, Greek, and Cyrillic, this typeface is especially suitable for use in the humanities. For more information, please www.brill.com/brill-typeface.

ISSN 1569-1462

ISBN 978-90-04-28913-0 (hardback)

ISBN 978-90-04-29334-2 (e-book)

Copyright 2015 by Koninklijke Brill nv, Leiden, The Netherlands.

Koninklijke Brill nv incorporates the imprints Brill, Brill Hes & De Graaf, Brill Nijhoff, Brill Rodopi and Hotei Publishing.

All rights reserved. No part of this publication may be reproduced, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission from the publisher.

Authorization to photocopy items for internal or personal use is granted by Koninklijke Brill nv provided that the appropriate fees are paid directly to The Copyright Clearance Center, 222 Rosewood Drive, Suite 910, Danvers, MA 01923, USA.

Fees are subject to change.

This book is printed on acid-free paper.

*For all my dear friends and mentors in the Hólar Project community,
especially Ragnheiður Traustadóttir, whose help and support made
this work possible.*



Contents

Acknowledgements IX

List of Figures XII

List of Tables XV

1	Examining the Process of Secondary State Development in Iceland	1
1.1	Defining a Secondary State	1
1.2	Only by Looking Far Will Things Become Clear: Situating the Icelandic Case within a Broader Viking Age Perspective	10
1.3	The Norse in Iceland	16
2	Environmental Constraints and the Development of an Autonomous Secondary State	28
2.1	Insular Communities and Island Environments: Autonomous Secondary State Formation	30
2.2	The Physical Landscape	38
2.3	Land Degradation and the Norse Colonization of Iceland	40
2.4	Land Productivity in Skagafjörður	53
2.5	Discussion	63
2.6	Conclusions on Iceland as an Autonomous Secondary State	66
3	The Norwegian World System: Hegemonic Colonial Secondary State Formation	69
3.1	Out on the Frontier: Models of Secondary State Formation in Colonial Settings	71
3.2	The Icelandic Sagas: Sources of Evidence, Sources of Contention	76
3.3	Is the Spade Mightier Than the Pen?	81
3.4	The Ability of Text to Reflect Reality	84
3.5	The Power of the Oral Tradition	87
3.6	The Social Reality of Medieval Iceland Represented in Text and Archaeological Remains	90
3.7	Conclusions on Iceland as a Hegemonic Colonial Secondary State	102
4	Examining the Economic Dimensions of Early Icelandic Society: A Proposed Methodology for Multiregional Settlement Pattern Analysis	104
4.1	Settlement Pattern Research in Iceland and Regional Network Analysis	107

4.2	Environmental Setting of Skagafjörður	112
4.3	Research Methodology	114
4.4	Intensive Survey of Hjaltadalur and Viðvíkursveit	122
4.5	Conclusion	128
5	The Archaeological Survey of Hjaltadalur and Viðvíkursveit	129
5.1	Environmental Setting of the Research Area: Hjaltadalur and Viðvíkursveit	130
5.2	Research Design of the Hjaltadalur and Viðvíkursveit Survey	131
5.3	The Ás Territory	138
5.4	The Hof Territory	145
5.5	The Viðvík Territory	180
5.7	General Settlement Trends for Hjaltadalur and Viðvíkursveit	235
6	From Independent Traders to Dependent Tenants: Reflections of an Economic Landscape in Skagafjörður	239
6.1	Models for Understanding the Medieval Economy in Iceland	240
6.2	Results of the Skagafjörður Landscape Project	248
6.3	Organizing the Landscape: Evaluation of the Three Proposed Economic Models	258
6.4	Phase I: A Viking Age Economy, 870–1000/50 A.D.	259
6.5	Phase II: A Medieval Economy, 1050–1300 A.D.	269
6.6	Phases III and IV: A Secondary State Operating under an Ecclesiastical Economy	292
6.7	Conclusion	301
7	The Formation of a Synergistic Secondary State in the Norse Economic Territory	304
7.1	Synergistic Secondary State Formation	305
7.2	Archaeological Correlates and Application of the Synergistic Secondary State Model	311
7.3	The Social Structure of Scandinavia	315
7.4	Social Structure and Ecology of Pre-State Iceland	319
7.5	Social Structure and Ecology of Sturlunga Age Iceland and the Emergence of a State Society	322
7.6	Rethinking State Formation in Iceland	327
	Bibliography	331
	Index	363

Acknowledgements

The old adage, “it takes a village to raise a child,” fittingly describes the inception, the execution, and the completion of a book project. While I am given credit for this work, a project of this size could not have been accomplished without the collective support of countless individuals to whom I am humbly indebted. This book is as much theirs as it is my own. My research in Iceland owes tremendously to my mentor and friend Ragnheiður Traustadóttir. Ragnheiður not only allowed me to take part in her research projects, providing me with the resources, advice, and criticisms necessary to see my project to completion; she and her family also took me into their home on countless occasions, providing me with unconditional support and encouragement. I will always be thankful for our colorful late night talks over chocolate and diet coke that inspired me to think deeper and to explore new perspectives on the settlement of Iceland. Words alone simply cannot express my immense appreciation for Ragnheiður’s wisdom, generosity, enthusiasm, and friendship.

This project began as part of my research for a PhD dissertation so I would like to give special thanks to my committee chair, Paul Goldstein, for allowing me the freedom to undertake a research project in Iceland. It is impossible to aptly express my gratitude for his continual support and confidence in my ability to complete this research. I am also deeply appreciative of the support and mentorship of Guillermo Algaze, Nancy Caciola, Tom Levy, and Jón Viðar Sigurðsson, who each in their own unique ways have guided me throughout this long and sometimes grueling process. I am indebted to Jón Viðar in particular who encouraged me to write this book, and for giving me the confidence that my research would be of interest to wide audience of scholars, students, and all others who, like myself, are fascinated by the Vikings.

I am also deeply thankful to a number of individuals who actively participated in my archaeological survey project. First and foremost I wish to thank Lísabet Guðmundsdóttir who faithfully trekked all over Hjaltadalur and Viðvíkursveit with me throughout my entire coring survey. Despite the long hours, bad weather, and mad horses, Lísabet always remained positive and dedicated to our work, encouraging me to take “just one more core.” Her friendship and intellectual insights made my research possible. I am also grateful to a number of individuals from the Hólar Project, especially Steve Martin, Jennica Svensson, and Eavan O’Dochartaigh, who all showed me tremendous patience and support during the course of my fieldwork. Additional thanks must be given to Anna Rút Guðmundsdóttir for producing most of the maps included in this book. I am likewise indebted to a number of researchers in

Skagafjörður, especially Guðný Zoëga, Sigríður Sigurðardóttir, and Byndís Zöega, who each provided me insightful advice and suggestions on how best to carry out my research. It is a pleasure and my good fortune to have enjoyed their help and support.

I am likewise extremely fortunate to have had the mentorship of John Steinberg, who gave me my start in Iceland. John has given me tremendous guidance and encouragement over the last ten years for which I am indebted to him beyond words. I am particularly thankful to him for inviting me to participate in his Skagafjörður Archaeological Settlement Survey project during the initial stages of my work. He, along with Douglas Bolender, Rita Shepard, John Schoenfelder, Paul Durrenberger, and Suzan Erem were my first teachers and supporters, and their expertise prepared me well for undertaking my PhD project, which helped to jumpstart the research presented in this book. Special thanks must also be given to my mentors at the University of Iceland, especially Gunnar Karlsson, who offered valuable criticisms of my use of saga materials. I am further indebted to Christian Keller and Jesse Byock for taking the time to discuss with me various approaches to my study. I am forever grateful to all of my mentors.

Final support for my research was made possible through the generosity of the Fulbright Foundation, the Icelandic Ministry of Education, the Hólar Project, the Department of Anthropology at UCSD, and fieldwork funding provided by a postdoctoral position I held at Stanford University. These resources made it possible for me to live for extended periods of time in Iceland and to conduct primary archaeological fieldwork.

I am also greatly appreciative of the numerous friends who have provided me with a strong support group and have been a constant source of enthusiasm and encouragement. Many thanks go to the UCSD and University of Iceland graduate students who have shown me much kindness, support, and generosity while I was doing the initial research for this book. I would also like to offer particular thanks to Beth Peterson Roselyn and Alicia Boswell, whose friendship, enthusiasm, and ability to always help me see the positive in any situation are traits that I truly cherish and admire. I am likewise grateful to Elizabeth Monroe, Ulli Green, Davide Zori, Aline Wacke, and Margrét Valmundsdóttir for helping me to keep somewhat grounded to reality throughout the often socially isolating writing process.

Lastly, I express my deep thanks to my family, who helped me financially and emotionally through this process, along with respect and gratitude to my Icelandic family at Minna Mosfell for allowing me into their home and providing me with affection and support. I offer so many thanks to my parents, my brother-in-law Simon, and especially to my sister Erin. At times when I did

not think I could achieve my goals, Erin has shown me unconditional love, encouragement, and patience, motivating me to keep working and to keep trying. I thank her for this and for so much more than can be put into words. Lastly, I want to thank my niece Elinor, who at the tender age of 1 has provided me with a renewed sense of joy and excitement in both my life and in my work. I hope she will one day read this book and develop a passion for studying the past, a passion for exploring other cultures and traditions, and a passion for using education as a tool for finding her own joy and purpose in life.

List of Figures

1	Map of the North Atlantic and Iceland	9
2	Map of the Norse Economic Territory (NET)	15
3	Map showing the extent of soil erosion in modern Iceland (after Arnalds 2004)	50
4	Iceland's volcanic rift system	51
5	Map showing the soil type complexes found in modern Iceland (after Arnalds 2004)	52
6	Map showing the research areas	54
7	Overall (a) deposition and (b) deposition rates by farm across time	57
8	Average silt percentage by farm across time	61
9	The relative position of the five farms with respect to the average depth of Hekla 2900 and the tax value from the <i>Jarðabók</i>	64
10	Graph of nodes and hubs comparing the structural difference of a clustered system and a scale-free system (after Buchanan 2002)	110
11	Map of the research area showing the geographic extent (in yellow) of Skagafjörður	113
12	Turf 'brick' or 'block' construction	124
13	Profile of a core	125
14	Map of Hjaltadalur and Viðvíkursveit and the sites archaeologically surveyed	131
15	Map showing the initial land claims of Hjaltadalur and Viðvíkursveit documented in <i>Landnámabók</i>	133
16	Profile of Efri-Ás core 12	142
17	Profile of Efri-Ás core 27	143
18	Profile drawing of Hof test trench	150
19	Profile of Nautabú core 1	155
20	Profile of Kálfsstaðir core 17	159
21	Profile of Kálfsstaðir core 18	160
22	Profile of Kálfsstaðir core 20	160
23	Profile of Kálfsstaðir core 27	162
24	Profile of Kálfsstaðir core 39	162
25	Profile of Hvammur core 6	166
26	Profile of Hvammur core 3	167
27	Profile of Hvammur core 29	168
28	Profile of Geitagerði core 13	171
29	Profile of Geitagerði core 23	172
30	Profile of Geitagerði core 6	173

31	Map showing the distribution of sites during the Settlement period (870–1000 A.D.)	177
32	Map showing the distribution of sites during the Early Medieval period (1000–1104 A.D.)	178
33	Map showing the distribution of sites during the Sturlunga period (1104–1300 A.D.)	179
34	Map showing the distribution of sites during the Late Medieval period (1300–1600 A.D.)	181
35	Map of Hólakot showing surface feature and coring survey	187
36	Profile of Hólakot core 17	193
37	Profile of Hólakot core 13	194
38	Profile of Hólakot core 14	195
39	Profile of Hólakot core 1	196
40	Profile of Hólakot core 18	197
41	Profile of Hólakot core 32	198
42	Profile of Hólakot core 35	199
43	Profile of Fornistekkur core 31	204
44	Profile of Langhús core 18	209
45	Profile of Langhús core 22	210
46	Profile of Langhús core 24	211
47	Profile of Miklihóll core 4	217
48	Profile of Miklihóll core 5	218
49	Profile of Miklihóll core 18	219
50	Profile of Miklihóll core 20	220
51	Profile of Miklihóll core 21	221
52	Profile of Bakki core 5	222
53	Profile of Bakki core 6	223
54	Profile of Hofstaðir core 17	230
55	Map of Skagafjörður by elevation	241
56	Sites (n = 61) in the Settlement period (870–1000 A.D.)	266
57	Sites (n = 95) in the Early Medieval period (1000–1104 A.D.)	270
58	Church Sites during the Sturlunga period (1104–1300 A.D.)	282
59	Sites (n = 140) in the Sturlunga period (1104–1300 A.D.)	285
60	Farms owned by the Hólar Bishopric as recorded in church and census records	293
61	Sites (n = 415) in the Late Medieval period (1300–1600 A.D.)	296
62	Sites (n = 539) in the Early Historic period (1600–1800 A.D.)	297
63	Sites (n = 428) in the Historic period (1800–1900 A.D.)	298
64	Rank-size plot for farmstead sites for the Settlement period	320

65	Rank-size plot for farmstead sites for the Early Medieval period	321
66	Rank-size plot for farmstead sites for the Sturlunga period	324
67	Rank-size plot for farmstead sites for the Late Medieval period	326
68	Rank-size plot for farmstead sites for the Early Historic period	326
69	Rank-size plot for farmstead sites for the Historic period	327

List of Tables

1	Timeline of Icelandic history	5
2	Classification of Icelandic Andosols	39
3	Average rate of (a) soil deposition and (b) texture percentages in the Prehistoric period	58
4	Average rate of (a) soil deposition and (b) texture percentages in the Settlement period	58
5	Average rate of (a) soil deposition and (b) texture percentages in the Historic period	59
6	Average rate of (a) soil deposition and (b) texture percentages in the Modern period	60
7	Geo-cultural regions by environmental type considered in the Skagafjörður landscape project	106
8	Tephra sequence in Skagafjörður	127
9	Farmstead sites archaeologically surveyed in the Skagafjörður Landscape Project	135
10	Non-farmstead sites archaeologically surveyed in the Skagafjörður Landscape Project	136
11	Coring data from Efri-Ás	141
12	Coring data from Hof	152
13	Coring data from Nautabú	154
14	Coring data from Kálfstaðir	158
15	Coring data from Hvammur	165
16	Coring data from Geitagerði	170
17	Coring data from Kollugerði	175
18	Farmstead sites in Hjaltadalur over time	182
19	Activity area sites in Hjaltadalur over time	184
20	Coring data from Hólakot	189
21	Coring data from Fornistekkur	202
22	Coring data from Langhús	207
23	Coring data from Miklihóll	215
24	Coring data from Bakki	222
25	Coring data from Hofstaðir	227
26	Farmstead sites in Viðvíkursveit over time	233
27	Activity area sites in Viðvíkursveit over time	236
28	Sites in Hjaltadalur and Viðvíkursveit by elevation over time (n = 79)	237
29	Sites by region and time period (non-domestic sites in parenthesis) identified in the archaeological coring survey	237

30	The number of sites by elevation within the geographic areas of Skagafjörður	242
31	All site types by location and time period considered in the SLP (n = 610)	249
32	Farmstead site types by location considered in the SLP (n = 492)	253
33	Type 5 sel sites by elevation over time (n = 46)	255
34	Type 6 activity area sites by elevation over time (n = 61)	256
35	Type 7 (trading sites), <i>type</i> 8 (pagan graves), and Type 9 (assembly Sites) by elevation over time (n = 11)	257
36	Phase I farmstead sites (n = 71)	267
37	Phase II farmstead sites (n = 115)	286
38	Phase III farmstead sites (n = 353)	299
39	Phase IV farmstead sites (n = 320)	299

Examining the Process of Secondary State Development in Iceland

1.1 Defining a Secondary State

Economic complexity was once considered alien to early medieval European communities. These so-called dark age societies were thought to have existed as insular, rural populations that had divorced themselves entirely from any of the commercial enterprises previously implemented by the Roman Empire.¹ More recent historical and archaeological studies have begun to illuminate the fallacy of this opinion, highlighting vigorous interaction among populations through trading activities as well as political alliances.² These activities ignited the Viking Age (790–1050 A.D.), a period characterized by long-distance travel, economic exchange, and political expansion. It was within this climate of social connectivity that new, second-generation state-level societies such as Iceland, the focus of this research, emerged. The process behind this development, however, has long remained an elusive study. This research quandary is best characterized by the observation that while state-level complexity shares many characteristics found in societies structured around other types of social organization, at some point, for unknown reasons, a transition occurs from the ephemeral access to wealth and power that characterizes small-scale societies to the development of an institutionalized elite faction that surpasses kin relationships and is sustained by an administrative and bureaucratic apparatus that manages the economy, plans the cities, marshals the armies, and promotes a shared sense of cosmology.³ Researchers can easily recognize state-level organization once it is fully formed, but the conditions under which these developments are likely to occur have remained a subject of ongoing and open

1 Grierson (1959).

2 Hodges (1982, 2000); Metcalf (1984).

3 V. Gordon Childe suggested that a society can be classified as a State if the following traits are present: urbanism; full-time labor specialization; the organization of communities based on territorial residence rather than kin connections; class stratification; the ability to amass a surplus of subsistence and luxury goods; monumental architecture; long-distance trade/exchange networks; standardized systems of writing; arithmetic, geometry, and astronomy; and representational/standardized artwork (Childe 1936, 1942).

debate within the fields of anthropology, history, economics, and political science.

Anthropological discussions of these issues have tended to frame the debate in terms of what Morton Fried called primary and secondary state formation.⁴ Primary state formation is a rare cultural phenomenon where first generation state-level organization is the result of an entirely endogenous, cultural-evolutionary development.⁵ Secondary state formation, on the other hand, is a far more widespread cultural occurrence that “can be attributed to pressure from an already existing state and often [will make use of] parts or all the organization of some prior state as the model for emulation or improvement.”⁶ Despite their widespread occurrence, the study of secondary states has long been relegated to the sidelines of archaeological research on primary states. In fact, very little research has been carried out to evaluate Fried’s concept of the processes that underwrite the development of secondary states. According to Fried’s model, all secondary state formation is the byproduct of external stimuli rather than a direct product of indigenous forces.⁷ The secondary nature of these complex polities, argued Fried, explains their development and therefore obviates further investigation. Barbara Price⁸ later revised Fried’s model by adding a category of secondary states that develop as a result of historical succession from an already existing mature state, but complexity in these budding state polities is still ultimately seen as the product of the expansionary activities of an established state whose offshoot polities simply emulate the social organization of the parent society. This focus on the entirely derivative aspect of secondary states has resulted in very few examinations of the structural organization of second generation states, suggesting that most researchers have been content to accede to Fried’s conclusion that secondary states develop only out of situations where existing states pressure societies to the brink of social change.⁹

The models currently available for examining secondary state development are additionally hampered by the tacit implication that smaller-scale societies are passive recipients of social complexity, and that their history and prior cultural achievements are muted by the voluble influences of their more complex neighbors. These two assumptions have rarely been challenged, yet

4 Fried (1967); Price (1978).

5 Cohen and Service (1978).

6 Fried (1967, 37).

7 *Ibid.*, 179; Rhee (1992, 191).

8 Price (1978).

9 Parkinson and Galaty (2007).

they have not been adequately supported through historical or archaeological evidence; thus, they are due to be critically reexamined. The few investigations that have avoided casting state formation in a secondary situation as the product of pressure or force from an existing state, have instead considered the development of second or third generation states as an echo of the same types of localized processes recorded for primary state formation. However, secondary states are not primary states; we must acknowledge that second or third generation states have consistently been documented as decisively different in their early governmental structure from those witnessed in primary states. The developmental history of secondary states is inherently different from that of their primary state cousins simply due to the fact that they exist in a world of already established mature state societies that can be consulted as models. This divide in research approaches has resulted in a stalemate over what a secondary state polity should look like. Must secondary states possess all of the classic traits found in a primary state in order to be granted the designation of a having a state-level organization, or should we anticipate stark differences between primary and secondary states? An even thornier question concerns the degree of variation among secondary states: even a cursory review of past and present states demonstrates that there are potentially many different types of secondary states, and that the path to state-level institutions varies tremendously among case studies.¹⁰ Does this observation leave us at an impasse?

A case study of medieval Scandinavia may help us to resolve this deadlock. Medieval Europe was home to a wide range of contemporary secondary states, from the Frankish Kingdoms to the Viking Age polities of Scandinavia – an ideal geographic area for a comparative study of the dynamics and variability of secondary state development. The processes behind the development of social complexity that characterized the Viking Age have so far received very little attention, reflecting a bias against the study of secondary states in general and a specific tendency to view medieval European communities through a decisively localized lens. The inclination to examine only local-level dynamics is an acknowledgement of clear evidence of internal social developments within Europe, but is also symptomatic of the inadequacy of the models used to reconstruct the medieval social landscape. For example, archaeologists have avoided the pitfalls of the derivative bias of secondary state models by focusing on the potential social consequences of population growth or environmental change as prime movers in the development of state-level institutions, while downplaying the influence of large-scale, pan-regional systems of economic interaction on state formation. These studies treat emergent complexity in

10 Rhee (1992, 191).

Europe as a *primary* development, but it is impossible to ignore the now overwhelming evidence that these societies operated within the scope of a larger world system that included interaction with already existing mature states.¹¹ Since both endogenous and exogenous variables help shape the social organization of any society, what is needed is a model that can account for the dynamics of local as well as global factors, treating each as components of a larger system, with all variables operating in tandem rather than in isolation.

This book begins and ends by addressing this crucial question of how best to study secondary state development as the interplay between internal and external events. My research examines secondary state formation in medieval Iceland, arguing that this development must be seen as a relationship between local environmental and social stimuli and also as the product of pan-regional economic and political interaction. The question of how and why state-level institutions developed in Iceland is not only the basis for a detailed case study of secondary state formation but likewise highlights the divide in research approaches between models framed around local variables and those framed around external variables. Iceland is clearly a second generation state – the small North Atlantic island was settled by Norse colonists at the height of Viking Age expansion in the late 9th century A.D. and was initially organized around a political system of chieftains.¹² By the start of the 12th century, however, this system was weakened by extreme competition among rival elite factions, which sparked civil warfare and the consolidation of political power that ultimately paved the way for the rise of the Icelandic state.¹³ State formation, therefore, was hardly a single event but rather the outcome of the enduring constraints of multiple social and environmental processes. In fact, by the time this social conflict had reached its boiling point a number of incipient state-level institutions were already in place, including: the formalization of a codified legal system; the formation of tax collection procedures backed by the development of a standardized system of writing; the formation of private property; the formation of a single monotheistic ideology; the formation of geopolitical systems of consolidated power that supplanted the limited authority of the office of chieftaincy; and the formation of strict economic control over both local and international trade (see timeline in Table 1). Scholars, while in agreement on the presence of these state-like traits, are divided on the cause of their development, paralleling the larger anthropological debate on the processes behind secondary state formation. Iceland's proximity to multiple

11 Forte et al. (2005); Metcalf (1984); Pirenne (1954).

12 Durrenberger (1988, 1992, 41–50).

13 Sigurðsson (1989, 45–70; 1995).

TABLE 1 *Timeline of Icelandic history*

Date (A.D.)	Event
793	Viking raid at Lindisfarne ushers in the era of Viking expansion throughout Europe.
c.860s	Viking discovery of islands in the North Atlantic including the Shetland Islands, the Orkneys, the Hebrides, the Faeroe Islands, and Iceland.
885–900	Norway becomes a state after Harold Finehair wins the battle at Hafsrfsjord, uniting most of Norway under his rule. Harold consolidates his power by forcing chieftains either to support his rule, leave Norway, or perish at the hands of his army.
870–930	Norwegian Vikings settle Iceland.
c.930	The Alþing, Iceland's first democratic assembly, is founded.
986	Erik the Red settles Greenland with a fleet of 25 ships, transporting from Iceland and Norway hundreds of people, sheep, cattle, pigs, and horses. The Eastern Settlement is established, centered around Erik's farm, Brattahlíð.
ca. late 980s	The Western Settlement in Greenland is established.
1000	Iceland peacefully votes at the Alþing to convert to Christianity. Leif Erkison converts Greenland to Christianity on behalf of Norwegian King Olaf Tryggvason. Icelanders Guðríður Þorbjarnardóttir and Þorfinnur Karlsefni Þórðarson join Leif Erikson and travel to Vínland to help establish a short-lived colony.
c.1050	End of the Frontier Society and start of a manorial system under the rise of the <i>storgoðar</i> .
1056	The bishopric at Skálholt is established (Episcopal See).
1096	Tithe tax is introduced.
1100–1264	The Sturlunga period and the creation of <i>ríki</i> .
1106	The bishopric at Hólar is established (Episcopal See).
1122–1132	Ari Þorgilsson the Learned writes <i>Landnámabók</i> (<i>The Book of Settlements</i>) and <i>Íslendingabók</i> (<i>The Book of the Icelanders</i>),
1220–1260	Usurpation by the <i>storgoðar</i> (super or big chiefs).
1258	King Halkon of Norway appoints Gizur Þorvaldsson Jarl of Iceland.
1261	King Halkon sends his own representatives to Iceland to ensure his supremacy and the right to claim taxes.
1262–1264	End of the Free State: Iceland officially loses its independence and becomes a colony of the Norwegian Crown.

TABLE 1 *Timeline of Icelandic history (cont.)*

Date (A.D.)	Event
1268	Gizur Þorvaldsson dies; his position as Jarl is never filled and is later abolished.
1271–1284	Sturla Thordarson writes the <i>Saga of the Icelanders</i> .
1300	The <i>Sturlunga saga</i> is compiled.
1380	The kingdoms of Norway and Denmark are united through marriage; Iceland becomes a colony of Denmark.
1387	<i>The Greenlanders' Saga</i> is written.
1702–1714	Information for the <i>Jarðabók</i> is collected by Árni Magnússon and Páll Vídalín.

state-level societies has cast a long shadow over its history, but there is no clear consensus among archaeologists and historians on the extent of these monarchical neighbors' influence on the accelerated pace of political and economic complexity documented for 12th-century Iceland. The fields of archaeology and history moreover are deeply divided between those scholars who see the development of state-level complexity as a result of external factors, especially foreign hegemonic control (traditional secondary state formation), and those who suggest these developments are mainly internally driven along evolutionary lines, with population pressure and environmental change as the primary instigators of social transformation (primary state formation). Archaeologists have favored internal models of social evolution, illustrating how anthropomorphic degradation of the landscape coupled by an average increase in the population led over time to a scarcity of resources, principally agricultural land, enabling elites to control and restrict access to vital subsistence goods.¹⁴ In contrast, social and literary historians have looked beyond the horizon to suggest that Iceland was above all a Norse colony whose political and economic infrastructure reflected the needs and demands of their Scandinavian homeland.¹⁵ State institutions developed in the periphery, they argue, because they were necessary to facilitate the economic demands of the core, not as a result of localized politics. Both models have their merits, with each incorporating a large corpus of evidence; however, by privileging one set of data above

14 See especially McGovern et al. (2007).

15 See in particular Hastrup (2004).

all others, each model considers only half of the ‘North Atlantic Saga’¹⁶ providing an incomplete look at the complex suite of factors that made Iceland poised for social change.

The debate over how and why the Icelandic state developed not only reflects anthropological concerns over how states are formed but is also underwritten by a much older divide between what C.P. Snow¹⁷ identified as the ‘Two Cultures’ combatants, positing archaeology’s science-based approach on one side, and history’s textual-based approach on the other. Many scholars have viewed the datasets of these two ‘cultures’ as irreconcilable, an outlook that has resulted in unnecessary polemics and isolated research. Armed with separate datasets, archaeological and historical research projects have come to very different conclusions about the nature of the social structure of medieval Iceland, prompting concern over the usability of the material record on the one hand and of the documentary evidence on the other. The archaeological record in Iceland is challenged by a lack of clustered settlements, the use of ephemeral¹⁸ building material, and an overall poor artifactual¹⁹ visibility onto what would have been the society’s typical economic and political practices. The documentary record is complicated by texts that began as an oral tradition, in some cases only committed to writing more than two hundred years after their inception. This lag time has generated concern over the reliability of these texts and caution in using them as a source of historical evidence. For the two opposing camps, the methodological limitations of history and archaeology have respectively become battle cries against relying on the other discipline’s dataset, further hindering our ability to reconstruct the social organization of early Icelandic society. I will suggest here that this separation of datasets is a false division, as each source of evidence provides compatible views on the same social processes underway throughout Iceland’s medieval period.

16 Jones (1986).

17 Snow (1959).

18 Wood suitable for building timber is almost entirely absent in Iceland; while stone is readily available in many areas, the colder climate renders this material likewise unsuitable. The solution to these building predicaments was turf (sod), which was widely available, easy to work with, and provided excellent insulation. The downside for archaeologists is that, due to turf’s organic nature, very little of it preserves in the material record (see Chapter 4 for further discussion on turf construction).

19 This low visibility is the result of preservation conditions – only few types of artifacts commonly found in all households are routinely uncovered – but is also the product of a research agenda that targets excavations within domestic structures only (see Chapters 4–6 for further discussion on this research bias).

My methodological approach is therefore aimed at examining the dialectic between the 'word' and the 'material culture' of medieval Iceland. Framing my research within this holistic methodology reveals that the perceived dissonance between the fields of archaeology and history on Icelandic research is in fact more indicative of the limitations of the current anthropological models for understanding the nature of state formation, be this in a primary or a secondary context. The Icelandic state, like many other known cases of second generation complex polities, differs dramatically from the handful of documented primary states: there is no urbanism, no monumental architecture, and no single centralized seat of power, such as a king. In place of these classic state characteristics is a feudal-based structure: power is vested in multiple hands, with an economy heavily grounded in agrarianism but rigidly controlled by a landed elite and managed through a complex tax system aided by the structural arrangements of the Catholic Church and its accompanying ideological authority. Underlying all of these interconnected debates, then, is a larger anthropological concern over what constitutes a state and under what set of circumstances a state is likely to develop. Should we expect all states, primary and secondary alike, to have a shared set of specific traits? If so, which traits must be present for us to call a society a state? Is there a way to avoid the pitfall of privileging internal or external factors by creating a more inclusive, middle-ground model? In this book I will propose a new research paradigm: the *Synergistic Secondary State Model*. The Synergistic Secondary State Model follows the lines of discussion generated by landscape and social connectivity models,²⁰ which view the physical and cultural landscapes as recursive systems. This approach draws upon a social network methodology and is designed to incorporate both micro- and macro-level dynamics. Rather than searching for causal variables and generating a series of trait lists, the synergistic secondary state model seeks to examine the relationship between variables, arguing against the notion of *prime movers* for the development of state institutions.

While variables can appear static, relationships are dynamic and reflect the social conditions of a society. Relationships mediated in the past, however, are difficult to examine in the material archaeological record. The organization of this book is guided then by the challenge of how best to examine secondary state formation, particularly within a research setting that faces serious methodological limitations that include a fragmentary archaeological record and documentary evidence that has fallen under severe scrutiny regarding its usability. Archaeology has a long history of developing methods for examining ancient behavior from equally challenging situations; in this book, in addition to

20 Castells (1996); Hornborg and Crumely (2007).

presenting a new anthropological approach for understanding secondary state formation, I will offer a new methodological approach for understanding the processes behind these developments that addresses these evidential concerns.

The data presented here are the outcome of a historical-archaeological project carried out in Skagafjörður, northern Iceland (see Figure 1), which seeks to examine state formation in Iceland as the nexus of local politics and entrepreneurial interests connected to international markets in Scandinavia and beyond. To achieve this goal I have designed the Skagafjörður Landscape Project (SLP), a regional archaeological and historical survey that covers an area of a little over 5,500 km² and spans nearly a thousand years. The SLP was designed to demonstrate that the best approach for addressing the broad but crucial question of how secondary states develop is through the creation of a research methodology than can simultaneously integrate several lines of evidence. Unlike previous approaches, my research relies on a number of separate but not mutually exclusive datasets, including archaeological material (see Chapters 5 and 6), geomorphological data (see Chapter 2), and primary texts (see Chapter 3). Archaeological data from the SLP study were collected to determine when domestic farmsteads were established and what range of economic activities were conducted at these sites from the late 9th-century

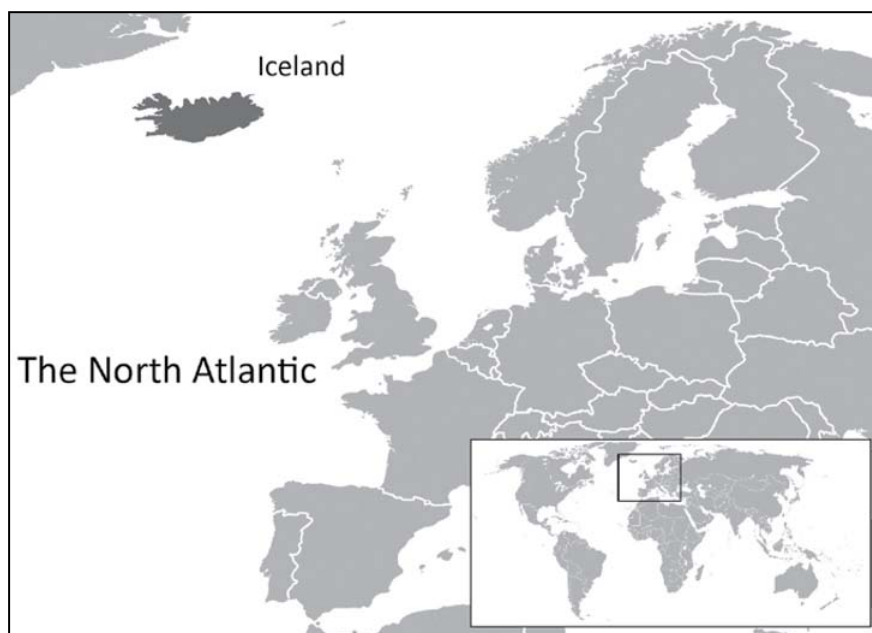


FIGURE 1 *Map of the North Atlantic and Iceland*

settlement period, to the beginnings of state formation in the late 11th century, and finally to the political takeover by Norway and the rise of the Church as a political superpower in 1262 A.D. The goal of the SLP was to document the evolution of the social and physical landscape throughout these time periods as an insight into the potential processes of secondary state formation. This research approach will consider social change in Iceland at the hands of both human and environmental agents, with the acknowledgment that global changes, be they climatic or economic, can make an impact on a local scale.

By investigating the social dynamics of medieval Iceland through a framework based on interaction networks, I will explore in the subsequent chapters how local and external factors can be examined in the archaeological record and how this interplay created a situation for social change in not only Iceland, but in other similar case studies of secondary states. The following chapters explore the question of how secondary state formation occurred by testing three distinct economic models that correspond to three separate models that have been applied to the development of the Icelandic state: the *Autarkic Model* (*Autonomous Secondary State*), which suggests that state formation was the result of autonomous, local processes similar to those documented in primary state formation (Chapter 2); the *Imperial Economy Model* (*Hegemonic Colonial Secondary State*), which suggests that direct imperial control of the Norwegian state supplanted chiefdoms with state institutions in Iceland (Chapter 3); and my own model, the *Norse Economic Territory (NET) Model* (*Synergetic Secondary State*), which suggests that control over the local political economy, fuelled by global interaction in a world market alongside local landscape transformation, resulted in the formation of an Icelandic state (Chapters 4–7). Chapters 2 and 3 will explore the existing theories deployed to explain state formation in Iceland by first presenting the theoretical underpinnings of each model followed by a critical evaluation of the data used to support these theories. These chapters will conclude by outlining the limitations of these models as well as what we can learn from these approaches. In the remaining chapters, I will develop my own model by first presenting new data collected in the Skagafjörður Landscape Project (Chapters 2–6) and will conclude with a discussion of how these data suggest a new approach to the study of secondary state formation (Chapter 7).

1.2 Only by Looking Far Will Things Become Clear: Situating the Icelandic Case within a Broader Viking Age Perspective

Historians, medieval and modern alike, have been debating the cause of the Viking Age since it began. The one fact everyone can agree on is that “the

Vikings did not spring fully formed on to the international stage [in the 8th century A.D.]; they were the inheritors of a long tradition" of sea travel, trade, and sometimes warfare with their neighbors.²¹ Centuries before the Viking Age, evidence of waves of migration in and out of Scandinavia have been documented, some from as early as the 2nd century B.C., when Roman writers began to describe the sometimes peaceful, sometimes violent interaction between themselves and the Teutons.²² The Teutons, one of many Germanic²³ tribes in what is today Denmark, were praised by Roman writers for their military heroism and ethic of honor. As the Roman world expanded further north, pushing out various local Germanic groups, greater military conflict ensued. While the Romans may have had larger armies and more technologically advanced weaponry, Germanic groups such as the Teutons proved a formidable match. Roman authorities found that the only practical way to stop these groups was to hire them as mercenaries. Thus began a long and complicated relationship between Rome and the ancestors of future Viking groups, which culminated in the sacking of the city of Rome in 410 and 476 A.D. by a group known as the Goths. The Goths, Norse speakers from Sweden, brought organized Roman dominance to an end in northern Europe, ushering in a new era marked by the development of kingdoms, first in continental Europe and subsequently in Scandinavia, as well as by the global mercantilism that culminated with the Viking Age and the vast movement of Norse peoples.²⁴

The Viking Age is a period of marked transition for Scandinavia. Formerly societies on the outer margins of the decadent Roman Empire, they were now in a position to seek new opportunities in Europe and beyond. Viking raids, trade, and expansion throughout northern Europe have, however, traditionally been viewed as solutions to problems internal to Scandinavia, such as population pressure or limited land inheritance,²⁵ while neglecting their place in the global context. This localizing tendency is all the more surprising as the process of increased social complexity that characterizes this period fits squarely within the paradigm of secondary state development. In contrast, a growing body of evidence suggests that Scandinavia was every bit as plugged into a

21 Clements (2005, 2).

22 Hedeager (2008, 11).

23 Germanic here refers to the language group commonly spoken by at least 40 separate tribal groups throughout northern Europe by the 2nd century B.C. The term *Norse* is commonly used to describe the Germanic-based languages spoken throughout medieval Scandinavia.

24 Hedeager (1993, 121); Haywood (1995).

25 Rosedahl (1998); Sawyer (1988).

medieval world system as those societies within the realm of northern Europe's imperial neighbors. This approach takes its cues from the earlier work of the Belgian historian Henri Pirenne,²⁶ who argued that the rise of European kingdoms was intimately related to the rise of Muslim expansion in the late 7th century A.D. and the concurrent shift of trade routes away from the Mediterranean to northern and western Europe.²⁷ The 'Pirenne Thesis' suggests that the Islamic conquests of North Africa, the eastern Mediterranean, and Spain in the 7th and 8th centuries A.D. effectively overthrew Roman mastery of the sea lanes connecting what remained of the Western Roman Empire with the Byzantine Empire in the east.²⁸ This takeover resulted in the growth of the Frankish Kingdom and the eventual rise of the Carolingian Empire and the western Catholic Church under the direction of Charlemagne. There could not have been a Charlemagne, however, without a Mohammed. Pirenne concluded that instead of viewing the 4th through 10th centuries A.D. as a period of decay in European history, it should be seen as a watershed era for the development of new political systems. While Scandinavian social development was not Pirenne's focus, he did acknowledge in his work that Islamic dominance over the Mediterranean might have encouraged the rise of the Viking Age, positing that Scandinavian societies seized the opportunity to become the middlemen between the east and west. The one shortcoming in his model is that he did not suggest a possible motivation for Scandinavian societies to enter into this global arena, merely assuming that societies would have found the allure of foreign markets irresistible. Limited to only textual data and a few numismatological studies Pirenne could not address how both local and external factors operated together to produce the Viking Age.

Swedish historian Sture Bolin responded to the Pirenne Thesis by arguing that the data clearly indicated that just as there could not have been a Charlemagne without a Mohammed, there could be no Charlemagne without the Viking warlord Godfred as well.²⁹ That is to say, Charlemagne could not have existed without the strategic positioning of the Norse in eastern Europe. Bolin examined the existing collections of coins discovered in Viking hordes and made a somewhat startling discovery: the design and weight of the Frankish denier was determined by contemporary Islamic silver coinage, which he believed illustrated a close connection between the Islamic and Carolingian worlds. Bolin even went so far as to suggest that Charlemagne's numerous

26 Pirenne (1954).

27 Hodges and Whitehouse (1983).

28 Ibid., 4.

29 Bolin (1952).

monetary reforms directly corresponded to periods of change in Islamic coinage, and even more surprisingly that the Danish 'Woden Monster Sceatta' minted at the trading site of Ribe in turn paralleled the economic trends of the Carolingian Empire.³⁰ Accordingly, Charlemagne either relied on or was in direct competition with his Norse neighbors, but the extent of this relationship remained unknown to Bolin. With an increasing amount of archaeological data, however, new life has been breathed into Pirenne's and Bolin's theses,³¹ suggesting that the Viking Age was born above all out of economic interests. Just before, but especially after the fall of Rome in the west in the 5th century A.D., Scandinavians were becoming active merchants on a very broad scale. Aided by new advances in ship technology in the 6th and 7th centuries, Norse merchants were able to travel faster and farther afield than ever before. Likewise, the design of the Viking longship permitted heavier cargo, giving Norse merchants an advantage on their competitors. More than anything else, however, by the time of the first Viking raid at the end of the 8th century, the Norse held no permanent allegiances to any society other than their own. That is to say, they were willing to trade with anyone regardless of religion or ethnicity. Geographically positioned between the empires of the West and those of the East, the Vikings were able to act as middlemen between Europe, the Islamic Caliphates, the Byzantine Empire, and the Persian Empire. Access to foreign luxury goods abroad could be translated into a kind of social currency back home in Scandinavia: one traditional method for maintaining social relationships was through gift-giving and sponsoring feasting parties, thereby ensuring that the availability of luxury goods from abroad was a strong motivation for individuals to become active merchants. For the merchant, these voyages were a way to gain wealth, honor, and fame. Travel abroad was dangerous – to make it back alive and with a ship loaded down with luxury goods was a highly impressive and memorable achievement. Archaeological evidence supports this view,³² for wherever the Vikings went, trade seems to have been an important enterprise. While trade is often viewed as an outcome or byproduct of the Viking Age, I would argue that in fact trade may have been responsible for the political, social, and economic changes that characterize this period, rather than merely resulting from these organizational changes.

Nothing documents this reality more than the unlikely connection between Godfred, Charlemagne, and the 'Abbasid Caliph Harun al-Rashid. As the expansive Caliphate was extending its borders deeper and deeper into Charlemagne's

30 Coupland (2007); Madsen (1999, 197–202).

31 Forte et al. (2005); Hodges and Whitehouse (1983).

32 Ashby (2006); Crumlin-Pedersen (1999, 11); Jansson (1996).

Europe, these two imperial juggernauts had reason to view the other as a serious threat, creating a situation that could have potentially become hostile had Rashid not cleverly defused this tension by sending Charlemagne a small gift: a white Indian elephant. Charlemagne responded to this gesture with an equal air of conspicuous consumption, sending back to the caliph extravagant gifts, forging between the two leaders a well-mitigated truce. More was at play here of course than the simple act of giving gifts or even the flaunting of power, for it was through these exchanges that the equivalent of social alchemy was achieved, transmuting the distance of geography, the rift of differing religions and cultural values, and the fierce competition over land and economic markets into a connected, shared cultural universe. But for all the glitter of gold and silver, the Carolingian-ʿAbbasid alliance was always at best a compromise, as each emperor continued to make “great use of their respective religions as ideological apparatus for the underpinnings of their ambitions and political policies.”³³ Scandinavian elites, by contrast, could easily sidestep this ideological divide, as they were neither Muslim nor Christian, but pagan. While the Franks and Muslims may have seen Norse religion as inferior, it was by no means a threat to either. This accommodation made it rather easy for Scandinavian chieftains, especially the Danes who had a long history of economic and cultural influence from the Frankish Court, to maneuver for position within the east–west trade networks. This ploy is seen in the historical figure of the Danish warlord Godfred, and archaeologically with the establishment of the site of Heðeby, a large and well-organized trading center located in a navigable inlet in Jutland.³⁴ The geographic position of Heðeby was capable of connecting western Europe with the Baltic Sea, acting as a gateway to the eastern trade routes that led to both the Byzantine and Islamic Empires. Godfred escalated this economic challenge by sending his navy to the Baltic theatre, successfully sacking the site of Ruric, a trading port on what is today the northeastern German side of the Baltic coast. Godfred did not stop there; according the Frankish Annals, he seized the town’s craft specialists and moved them to Heðeby.³⁵ This was a strong blow to Charlemagne for two reasons: first, Ruric was a strategic stop on along a far-reaching trade route connecting the east with the west, while avoiding areas of Saxon and Danish control; secondly, and perhaps more importantly, Godfred, a petty king in the marginal periphery, was boldly challenging Charlemagne’s economic enterprises by physically threatening his access to silver and other prized goods from the

33 Hodges (1989, 156).

34 Christiansen (2002).

35 Sawyer (2001).

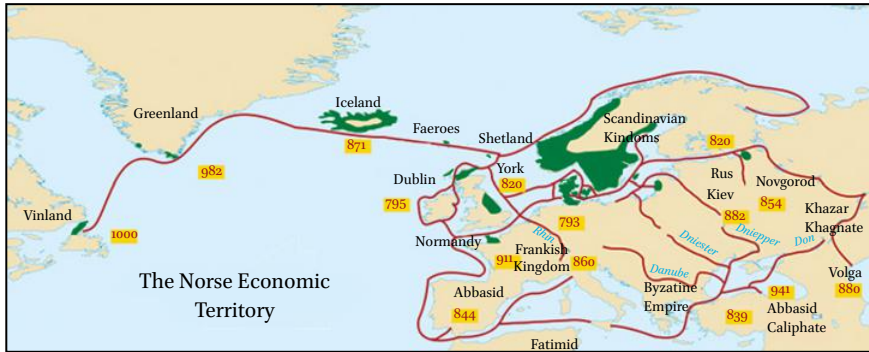


FIGURE 2 *Map of the Norse Economic Territory (NET)*

Baltic. Heðeby itself threatened to jeopardize the Carolingian markets with the Frisian Kingdoms and perhaps even within the Islamic and Byzantine spheres of influence. Charlemagne responded with full force, including the prized white Indian elephant as a symbol of his far-reaching global connections. In the short term, Charlemagne was able to slow Godfred's economic ambitions, but the groundwork for the Viking Age and Scandinavian sea dominance had been established.

This vignette clearly illuminates the power, commercial enterprise, and continued connectivity between cultures even after the fall of the Roman Empire in the west, and has recently been viewed as an important element in state formation in western Europe.³⁶ It was within this dynamic cultural universe that new state societies likewise sprang up in Scandinavia, dramatically ushered in with the adventurous Viking Age. These data suggest that an alternate method to examining the Viking Age as an insular development is to consider these advances through a broader spatial and temporal scale.³⁷ In this book, I have termed this high degree of economic and social connectivity as the NET: the Norse Economic Territory (see Figure 2). The Norse Economic Territory spatially refers to the network of Norse trading outposts throughout western and eastern Europe, the North Atlantic, and even briefly along the outer edges of the Canadian eastern frontier. Trade, travel, and colonization actively occurred throughout the NET, as individuals pursued access into this global market as a means to acquire goods to fuel local exchanges back home.³⁸ It is within this dynamic world system that Iceland should be viewed.

36 Abu-Lughod (1991); Hansen and Wickham (2000).

37 Forte et al. (2005).

38 Carter (2010).

1.3 The Norse in Iceland

There was a man named Bjarni, who dwelt at a farm called Langarhús, in Hrafnkelsdalr. He was married, and had two sons with his wife, one of whom was called Sámr, the other Eyvindr, both goodly men and promising. Sámr became a farmer while Eyvindr became a traveler, and went to Norway, where he dwelt for the first winter; from there he went abroad into foreign lands, coming at last to a stay in Constantinople, where he was right honorably received by the Greek king, and where, for a while, he spent his time – *Hrafnkell's saga* (Chapter 3).

Less than sixty years after Charlemagne deployed his war elephant to thwart the ambitions of Godfred, Norse Vikings sailed west into the North Atlantic and established permanent colonies on Iceland, the Shetlands, and the Faeroes. Settled in the late 9th century A.D., Iceland was one of the last places on earth to be colonized and represents the only historic example of the settlement and formation of a new society in a landscape entirely empty of people. The reasons for this colonization and for the subsequent rapid process of social transformation are hotly contested among social scientists. These different perspectives, as we shall see throughout this book, color the overall impression of Icelandic history and the processes behind the development of state institutions in the 12th and 13th centuries. Archaeological and historical documentary evidence provides no fewer than three possible explanations behind the colonization of Iceland: (1) displaced chieftains from Norway fled to Iceland to distance themselves from the king and to revive the glory of their former political authority (see Chapter 2) in a distant, independent land; (2) Iceland was settled at the behest of King Harold Finehair of Norway through formal annexation and planned colonization (see Chapter 3); and (3) Norse merchants and their families, living formerly in Scandinavia and Ireland, settled in Iceland to gain access to goods that could be brought to an international market (see Chapters 4–7). As the passage from *Hrafnkell's saga* indicates, all three of these motivations are plausible explanations for the settlement of Iceland, and may not be mutually exclusive. As separate explanations, however, they have led scholars to varying understandings of the development of social complexity in Iceland; therefore, these differences must be considered in evaluating the models for state formation presented in this book. To knowledgeably assess each of these models requires an informed historical foundation. In the following discussion, I will provide a brief description of the available sources of evidence as well as a concise overview of the history of medieval Iceland.

1.3.1 *From Turf Houses to Texts: Sources of Evidence*

The study of early Icelandic society is aided by both an archaeological and a documentary record. Most archaeological sites for the medieval period are farmsteads, making the excavation of domestic structures the foci of the majority of research agendas (see also Chapter 4). In addition to these sites, however, are a number of excavated churches and a small but growing number of trading harbor sites. The corpus of these data provide a wide range of information on the daily behavior of householders as well as on the more exclusive elite social practices such as feasting and the exchange of local and foreign commodities. The textual evidence available for the earliest periods of Icelandic society includes the *Sagas*,³⁹ an all-encompassing term that includes at least thirty-nine individual full-length narratives and forty *þættir* (short stories) that are often broadly organized into seven types: the historical sagas describing the settlement and early medieval period found in the *Landnámabók* (Book of Settlements) and *Íslendingabók* (Book of the Icelanders); sagas that take place outside of Iceland, most notably in Greenland and Vínland; the biographical depictions of Scandinavian kings found in the *Kings' Sagas* (such as *Heimskringla*); the history of the Church contained in the *Bishop's Sagas*;⁴⁰ sagas of chivalry; the biographical sagas of outlaws; the legendary or heroic sagas; the *Íslendingasögur* (Family Sagas); and later, for 12th-century society, the *Samtíðarsögur* (Contemporary Sagas).⁴¹ The Family Sagas were edited and compiled from an oral tradition portraying over a hundred family histories, poems, songs, and short stories in the late 13th–early 14th centuries A.D. and describe Icelandic society during the initial colonial period, the so-called Viking Age of Iceland, c.870–1050 A.D.⁴² As such, these sagas are not based on direct eyewitness accounts, but instead relied either on the imagination of the author or on social memory kept alive through an active oral tradition. Medieval Icelanders are depicted in the Family Sagas as fiercely independent people, who chose to face and managed to overcome the rough ocean currents of the Atlantic in open ships rather than remain embedded in the social turbulence of Norway; who staked their claim in an empty and arduous landscape; who created the *Alþing*, a democratic assembly; and who peaceful coexisted with one another without the interference of a king for some three hundred years.

39 Clover and Lindow (1985); Hreinsson (1997).

40 The earliest date for the Bishop's sagas (*Biskupa sögur*) is roughly 1200 A.D.

41 Kellogg (2001, liii–lxvi).

42 See also Clover (1982, 1985); Kristjánsson (1988).

In contrast, the Contemporary Sagas were written as eyewitness accounts of the events of the 12th and 13th centuries A.D. These metahistories are commonly known as the *Sturlunga sagas*, named after the Sturlung family, who were the main players in most of the events described and were likely responsible for subsidizing the writing of these texts. This overall collection of biographies and stories, notably the *Ísendinga saga* (Saga of the Icelanders), focuses extensively on the turmoil of the Sturlungaöld period (early 12th century), when the chiefly system of social order in Iceland was polarized between two powerful chiefs, and on the resulting civil war that paved the way for Norwegian intervention.

In addition to the Family and Contemporary Sagas, there are economic and legal documents from the Medieval period, most notably the *Landnámabók* ("Book of Settlements") – a descriptive land registry; the *Íslendingabók* – a genealogy and history of the settlement of Iceland up to the early 12th century; and the *Grágás* ("grey goose") or law books. There are several extant versions of *Landnámabók* that were more than likely penned by several different authors, but the original manuscript is thought by many scholars to have been at least partially written in the early half of the 12th century A.D. by Ari Þorgilsson (also known as 'Ari the Wise'). *Landnámabók* is a registry of the original land claims in Iceland, starting with the initial 9th-century colonization, as well as the transfer of lands through inheritance and purchase dating from the 10th through the 12th century A.D. *Íslendingabók*, also believed to have been written by Ari the Wise around 1130 A.D., likewise contains a registry of who settled when and where, but additionally presents a detailed genealogy of the first settlers of Iceland, providing us with some insights into who these settlers were as well as what their economic status and social reputation was.⁴³ For example, Ari reports that at least twenty-three *goðar* (chieftains) were part of the original 874 A.D. settlement and that these *goðar* brought with them their kinfolk, their slaves, and several hundred sheep and cattle⁴⁴ potentially revealing to us something of the initial social structure of Iceland.

Finally, one additional category of primary texts consists of the *Grágás* (Grey Goose Laws), a multivolume collection of at least 130 codices containing both the civil law codes and later Christian laws of medieval Iceland.⁴⁵ The *Grágás* was first recorded as part of an oral tradition, recited by the Law Speaker (*Lögsögumaður*) at the annual National Assembly (*Alþing*). Around 1117 A.D. it was decided that the laws should be written down, with chieftain Haflidi

43 Pálsson and Edwards (1972, 8–13).

44 Ibid., 2.

45 Dennis et al. (1980, 5–6).

Másson agreeing to commission the work.⁴⁶ They were first compiled by an unknown author shortly thereafter and revised numerous times over the following centuries, and are preserved in a few extant copies. Written into the civil codes is a documentation of the precedence for these laws, mentioning numerous resolutions and rulings of what must have been well-known legal cases, no doubt providing some legitimacy for a legal system that operated without an executive authority.^{47,48} This concern over legitimacy reflects how the Icelandic law codes, in contrast to other legal codes penned in medieval Europe, were crafted without “concern for royal justice of prerogatives” and instead highlight a form of customary law.⁴⁹ Interspersed among these seemingly dry regulations over property rights are the social and economic transactions of medieval Iceland, providing us with evidence of production, exchange, consumption, social inequality, economic specialization, and subsistence strategies – a second line of evidence for corroborating the political economy described in the sagas.

Taken together, the variety of past behavior captured in the archaeological and documentary records make the study of medieval Iceland exceptional in the amount of available information we have to consult. The research presented in this book will make active use of both datasets, presenting a more complete and faithful rendering of the social dynamics of early Icelandic society.

1.3.2 *The Landnám Age: 870–1050 A.D.*

According to documentary sources, especially *Landnámabók*, the first settlers in Iceland consisted of three types of individuals: wealthy Norwegian elites (*bændr*), including no fewer than twenty-three chieftains (*goðar*); supporters of chiefs (*þingmen*) who possessed no property in Norway and bought fares on cattle ships; and lastly, Celtic slaves and women⁵⁰ who were taken captive

46 Ari's *Íslendingabók* (Chapter 10) stipulates that Haflidi was empowered by the legislative council at the Alþingi to take on this reasonability, which in return must have accorded him some degree of social power (Byock 2001: 310).

47 Anderson and Miller (1989).

48 In the absence of a full-time police force it is of course difficult to gauge just how thoroughly these laws were actually enforced. The detailed discussion of past court rulings in itself may have been intended as an attempt to persuade individuals to follow the laws (Durrenberger 1992; Miller 1990).

49 Byock (2001, 308).

50 The documentary evidence suggests that families from Norway were the first settlers, and that some families had brought with them slaves purchased in Ireland (Karlsson 2000: 11–15). Genetic research on the modern population, however, has shown striking genetic

during raids in Ireland.⁵¹ These texts indicate that many of the first settlers had already lived in or had relatives already living in other Viking North Atlantic colonies, such as Ireland, the Hebrides, the Shetlands, and Orkney.⁵² At the same time that Iceland was settled, the Norse stronghold in Ireland was weakening as local populations waged war against their Viking conquerors. It is likely that a fair number of settlers in Iceland had been displaced from Ireland. Iceland's age of settlement (c.870–930), known in Icelandic as the *Landnám* or 'land taking', is characterized by medieval texts as a time of prosperity. The climate was considerably warmer⁵³ than what it would become by the 16th century, providing the first settlers of Iceland with a moderate environment. Today, Iceland strikes many visitors as a bleak landscape, made up of both fire and ice, for much of the topography is shaped by active volcanism and glaciations that leave only one fourth of the island habitable. To a Norse immigrant at the time of the *Landnám*, however, the land was seemed both bountiful and plentiful, a sentiment captured in sagas describing Iceland as an untouched land teeming with natural resources.⁵⁴ The settlers of Iceland formed a society of farmers with grass agriculture and pastoralism as their principal means of subsistence.⁵⁵ As ships of settlers arrived, chiefs busied themselves with claiming land for themselves and their followers, spreading themselves broadly over the entire island within a generation.⁵⁶ When these settlers arrived they brought with them what we might refer to as a transported landscape, one derived from their Norwegian homelands that centered on animal husbandry.⁵⁷ Cattle, sheep, horses, goats, and pigs were all introduced to the island, which previously had had only one indigenous mammal, the arctic fox.⁵⁸

differences that conform to sex categories. Females have more genetic markers found in Ireland than in Scandinavia, while males show the opposite with more markers from Norway (Pálsson and Hardardóttir 2002). These data can be interpreted either as an indication that slaves were predominately women, or that enough men had Irish wives to permanently shape the genetic makeup of the society.

51 Bagge (1992, 70–75); Durrenberger (1992, 25–27).

52 Byock (1988, 2–4); Guthmundsson (1967).

53 A warmer annual average temperature in Iceland was the result of a warming trend known as the Little Climatic Optimum that began in the North Atlantic by 900 and ended by 1350 A.D.

54 Buckland (2000, 146–147).

55 Durrenberger (1990a); Jóhannesson (1974, 288).

56 Durrenberger (1998); Vésteinsson (1998).

57 See also Chapter 3 for a more in-depth discussion on the anthropomorphic changes made by the initial settlers and the long-term effects of these changes in Iceland.

58 Jóhannesson (1974, 288).

These domestic animals taken together form a kind of 'Landnám package', and substantial acres of pastures were required to feed and house the livestock.⁵⁹

In addition to rearing livestock, Icelanders relied on a flexible economy of both wild and domesticated resources. In comparison with their Scandinavian homeland, Iceland had fewer wild food resources. For example, there were no wild caribou or reindeer, although there were seal and walrus populations and large colonies of birds, especially puffins, in the island's coastal waters, and its rivers teemed with a variety of fish. Edible plant species were equally limited, consisting of a few varieties of berries and leafy plants; as a result, the bulk of the Icelandic diet was based on animal products. As in other Norse North Atlantic colonies, diet was closely correlated with social status, as wealthier individuals relied less on wild resources for everyday subsistence. Therefore, the crucial component common to all households was grass, which was cut and dried to make hay. Stores of hay were critical for feeding livestock through the long Icelandic winters, which began as early as November and did not end until late April. This meant that animals could rarely be simply sent out into pastures to graze – they had to be fed. Despite sounding counterintuitive, we can refer to Icelanders as grass farmers and animal herders.

Household data from the archaeological record indicate that during the settlement period, there was little variation in size and plan,⁶⁰ which is indicative of a low degree of social ranking.⁶¹ Although a chieftain's domestic longhouse could be much larger than most, the layout of the structure was not different from other homesteads.⁶² Some bændr, too, had households as large as a goði. Characteristic of early Icelandic sites is the presence of multiple longhouses at each farmstead.⁶³ At each of the sites of Bessastaðir, Reykjavík, and Herjólfssdalur, two contemporaneous longhouses have been discovered; at Hvítarholt, three longhouses have been detected.⁶⁴ The contemporaneity of these longhouses suggests that more than one family or group established a farmstead, inferring communal ownership of land. The challenge of costly labor investments necessary for creating a pastoral landscape was perhaps met by these shared, multi-household farms.⁶⁵

59 McGovern et al. (1988).

60 Pálsson (1932); Steindórsson et al. (1987).

61 Randsborg (1982).

62 Vésteinsson (2000a, 171).

63 Ibid., 168.

64 Ibid.

65 Herlihy (1983); Sawyer (1988).

The Family Sagas hint at the social structure of the early society, describing this period as a time of heroism, honor, and friendship, with a system of checks and balances to suppress greed and to prevent any single individual from gaining too much power. By the mid-10th century, Iceland was divided into four *þing* (assembly) districts or administrative quarters: north, south, east, and west. There were multiple chiefs within each quarter and all landowning men (*bændr*)⁶⁶ were required to give their allegiance to one chief from the quarter where they owned land. As a chief's *þingmaðr* (follower), an individual was required to pay a small tax, to attend local *þing* (assembly) meetings as well as the annual *Alþing* (national assembly meeting), and to perform labor and military service when called upon by a chief.⁶⁷

Chiefs, in return had to provide a number of services to maintain the loyalty of their followers in what can be described as a competitive political system. As in other chiefly societies, Icelandic chiefs needed a steady income to front the costs of maintaining the support of their followers.⁶⁸ A chief was required to pay compensation awards; to exchange gifts with current and potential followers; to make loans; and to provide feasts and hospitality. While modern historians have often assumed that in the early medieval period chiefs were not any wealthier than other landowners, the Sagas and the *Grágás* suggest differently. Chiefs had exclusive access to a few sources of income, including but not limited to collecting taxes, receiving remuneration for officiating over legal disputes, and setting the prices for imported goods. Two types of taxes collected before the 11th century were the *þingkfaraþingkaup* (assembly travel tax) and the *hoftollr* (temple tax). Only a chief could collect these payments, but in return for this privilege a chief was required to front substantial costs. In exchange for the travel tax, the chief had to subsidize the total cost of travel and housing for their landowning followers to attend *þing* events, and in return for the temple tax a chief had to personally oversee the maintenance costs of the temple and provide the materials for religious rituals. Arguably, the chief did not even break even, and likely incurred additional costs. However, the chief also received social capital for these enterprises. The second source of wealth, serving as arbitrators, may have been particularly lucrative – the sagas frequently mention chiefs 'buying out' the claims of disgruntled parties. The risk of buying a claim was high, but so, too, was the reward, which could result in taking over landownership rights. Land was an all-powerful commodity that

66 *Bondi* is the singular, *bændr* is the plural and can be translated as a 'free farmer' who owns the land he or she labors on. In other words, an aristocratic.

67 Herschend (1994).

68 Sigurðsson (1999).

no elite could manage without, but gaining rights over land became increasingly difficult after the initial land rush in the settlement period. For a few generations, families of settlers could divide up the huge land claims into smaller units for sale or as grants, but the ability to do so was clearly finite. Likewise, as more farms were established, the potential for conflict with neighboring farmsteads increased. In such disputes, having the support of a chief was crucial, and without the arbitration of a chief the potential for blood feud and violence was greatly increased.⁶⁹ Under these circumstances, a chief could stand to profit by lending support to the claimant in a dispute. A chief could decide on the payment and was in a position to withhold support until promised a reward, which they could then use for subsidizing their own aggrandizement. The third source of wealth, price setting, is likewise a mixed enterprise. The *Grágás* states that, “men shall not buy expensive Norwegian goods from merchants at their ships until three men who set the rate within each district boundary have done so.”⁷⁰ However, as the decision to bring goods to Iceland ultimately was made by foreign merchants, chiefs would not have been advised to set the prices too high or to develop a bad reputation among merchants. In the early medieval period, there were at least twenty-three ports. If a merchant did not agree with a chief in one district, there was strong motivation to simply move on to the next port to sell their goods. Since the elite depended on these goods to finance their power brokerage – e.g., through feasting – arguably merchants held the upper hand. However, the laws did stipulate that no exchange could occur before chiefs had bought wares, ensuring elites always had the first choice of goods,⁷¹ and had the opportunity to buy large sums of valuable commodities that could later be redistributed.

While some scholars suggest that subsistence production was the only true form of economy present, most researchers will acknowledge that networks of local exchange and more commercial long-distance trade with Europe likewise played a role in the Icelandic economy. But the question of how influential or crucial these economic enterprises were to the social structure of the settlement period society and to the later development of state institutions is steeped in terse debate. Arguably trade could generate a tidy profit for chiefs, but many scholars have argued that the chieftain's income from trade should not be overemphasized. Byock, for example, argues that, “although better able to compete than their fellow Icelanders for modest gains of trade, the chieftains played only a passive part in controlling the flow of goods or in regulating

69 Lacy (1998); Miller (1983, 1986).

70 *Grágás* K § 167.

71 Byock (2001, 256).

prices when compared with the role played by foreign merchants.”⁷² Statements of this kind, however, fail to consider the entire social framework. Iceland society did not operate in isolation, but rather maintained and brokered relationships with individuals in Scandinavia and beyond throughout the medieval period. This need not suggest any lack of independence on the part of medieval Iceland prior to the late 13th century, but it does suggest that in examining the dynamics of medieval society one needs to consider the entire social arrangements under which the society operated.

I will argue in the subsequent chapters that what we are witnessing in the medieval texts is this interplay between two interrelated social dimensions: the localized chiefly arrangements situated within the broader international economic and political scene. The localized political activity of chiefs, therefore, can only be fully understood in the context of all of the variables acting on these individuals. International trade, therefore, should not be downplayed – through it, the Icelandic elite franchised their power and wealth on the local scale. Land ownership and trade are related variables in a cyclical feedback system: landownership is necessary for keeping livestock, especially sheep, whose wool could be sold abroad in exchange for goods that can be redistributed locally, in turn helping to finance the power of elites to maintain their authority and control over the landscape. Ownership of land, however ample, is useless if it is not converted into social capital, just as control of ample imports is useless if not used to further local politics.

1.3.3 *The Sturlunga Age, c.1050–1264 A.D.*

The beginning of social change in Iceland coincides with the end of Viking expansion between 1000 and 1050 A.D. Attempts to colonize Greenland and Vinland were only mildly successful. Vinland saw only one colony, while Greenland’s export-based economy of ivory and exotic animals, such as polar bears, garnered only a marginal position in 11th-century European trade. Norse populations throughout Scandinavia and in the colonies they had established across continental Europe, the British Isles, and the islands in the North Atlantic, turned their attention away from conquest and expansion and entered a phase of political and economic consolidation. Iceland, too, moved into a period of consolidation and away from a frontier mentality; alienable property became an increasing concern.^{73,74}

⁷² Byock (2001, 266).

⁷³ For a relevant comparison, cf. Harvey (1990) for a similar case study from the Valley of Mexico. The similarities between the frontiers of Mexico and Iceland suggest that the processes at work transcend historically specific events.

⁷⁴ Vésteinsson (2000a, 169).

A tendency toward consolidation is demonstrated by the creation of the *Alþing* (general assembly) founded by 930;⁷⁵ the transformation of oral record keeping to a permanent system of writing by 1130;⁷⁶ extensive laws regarding marriage and land inheritance;⁷⁷ the adoption of a singular, monotheistic religion;⁷⁸ and the consolidation of multiple chiefdoms into singular earldoms.⁷⁹

The *Alþing*, a variant of a traditional Scandinavian local judicial system,⁸⁰ established laws, tried cases, and was the first institutional structure aimed at unifying Iceland.⁸¹ The overwhelming majority of the laws, compiled in the law books known as the *Grágás*, reflect a concern over property inheritance.⁸² This concern may further explain the motivation behind the near-unanimous decision of the Alþing to establish Christianity as the religion of Iceland.⁸³ Christianity introduced customs derived from Roman law overseeing issues of primogeniture; these likely dovetailed with a nascent emphasis on landownership appearing once the prospect of colonizing unsettled areas in Iceland ceased to be a feasible social and economic vehicle for establishing greater wealth. The end (around 1050) of the Viking Age and its prospect for adventure and wealth abroad compounded the problem of a filled landscape within Iceland. Fraternal disputes ensued as the ambitions of younger sons could no longer be appeased with the temptations of ship and sail; the *Sturlunga saga* poignantly depicts a society constantly at the edge of a sword. Documented in this contemporary text is the civil war between the families of Sturla Sighvatsson and his rival, Gissur Þorvaldsson, a wealthy chieftain in Skagafjörður: "In those days, Sturla Sighvatsson was so overbearing that almost no man here in this country could hold his own against him. Some men have since reported his saying that he thought he could have controlled the whole country if he had managed to overcome Gissur."⁸⁴ The *Sturlunga saga* is a vivid tale of two chiefs vying for power and control over Iceland, with accounts of violent feuds, murder plots, and the burning of farmsteads found on nearly every page. Archaeologically, there is indirect and direct evidence of increased hostility and endemic warfare (Friðriksson 1994, 74). Weapons, such as daggers,

75 Durrenberger (1989).

76 Sigurðsson (2004).

77 Jochens (1995).

78 Aðalsteinsson (1999).

79 Sigurðsson (1999).

80 Miller (1990, 16–23).

81 Anderson and Miller (1989).

82 Dennis et al. (1980).

83 Aðalsteinsson (1999); Durrenberger (1988, 239).

84 *Saga of the Icelanders*.

axes, and swords, scarcely found in sites dating to the settlement period, become frequently discovered artifacts throughout the twelfth century in both household contexts as well as in graves.⁸⁵

The violence of the Sturlunga period was no doubt a mechanism used by chiefs to eliminate competition over land, prestige goods, and even more crucially alliances.⁸⁶ Beginning by the late 11th century, a process of consolidation in the number of chieftaincy positions fosters the emergence of a new class of elites: the *storgoðar* ('big chiefs'), who were not drawn from existing elite families, but rather were upstarts seeking wealth and power, and were willing to use unconventional means to achieve these ends. No farmer was safe from the predation of the *storgoðar* as they rapidly gobbled up the landscape, reducing former landowners to tenants and demanding tax payments from them.⁸⁷ Whereas such behavior would not have been tolerated during the settlement period, there is little evidence to suggest that any successful attempts were made to thwart the ambitions of the ascendant *storgoðar*. These aggressive activities led to the formation of political territories called *ríki*.⁸⁸ Replacing a system of multiple chiefs that each controlled a small territory, the *ríki* system allowed a handful of big chiefs to control all of Iceland. As the *storgoðar* were consolidating political power, a new religion, Christianity, was enabling the parallel goal of ideological consolidation. Under the older pagan ideological structure, chiefs served as priests in addition to their secular political and economic duties. With the advent of Christianity, chiefs as well as wealthy independent landowners became the benefactors of the Church, spurring competition over the mundane political power that derived from a sacred source of legitimization. Archaeologically we see this competition manifested by the sudden appearance of small churches located within the property of domestic farmsteads. The nexus of religion and consolidated political offices paved the way for elite control over the economy through developing a system of private property.⁸⁹ Land and wealth were united through the tithe, a new system of taxation implemented by the Church and backed by the development of writing. The amount of the tithe was determined by a fixed percentage of a farmstead's agro-pastoral production; over time, some farmers could not keep up with the payments and were resigned to give up the title of their land to a landlord. Within the span of a few hundred years, independent frontier

85 Friðriksson (1994, 74–100).

86 Durrenberger (1992, 2).

87 Vésteinsson (1998).

88 Sigurðsson (1999).

89 Durrenberger (1998, 175–181).

farmers had become dependent tenants, and the Icelandic landscape had become sharply characterized by feudalism.

The adoption of a monotheistic religion, a standardized system of writing, a land tenure system, and formal systems of taxation are all traits that most anthropologists would categorize as the telltale signs of state-level administration. The driving question of this book is how and why these institutions developed. Over the following chapters I will examine the existing theories on the processes behind the evolution from chiefdoms to secondary state. From these discussions I will highlight the limitations of each approach and demonstrate the need for a new model to fully examine the complex processes at work in the formation of state-level complexity. From my primary research in northern Iceland, I will develop in this book a new model for examining secondary state formation that views the process of social change as the synergy between local and external stimuli. While this model has been developed to understand social developments in medieval Iceland, the approach is broad enough to be applied to other case studies of state formation as well.

Environmental Constraints and the Development of an Autonomous Secondary State

The settlement of Iceland during the 9th century has long been seen by archaeologists as the result of displaced Nordic elites searching for a new homeland and the chance to rebuild the glories of their former chiefly social world that had been lost forever in Scandinavia to the autocratic policies of kings and bureaucrats.¹ For nearly two hundred years these Norse colonists, stationed in the distant expanses of a western frontier, marveled in a society organized around an ethic of cooperation and justice. Suddenly, this society collapsed and was replaced by a system of inequality and marginalization, as part of the process of formation of the Icelandic state. As the conventional argument has it, Iceland's characterization as a case study in *secondary* state formation is only a matter of the semantics – although the original colonizers had seceded from a pre-existing Norwegian state, Iceland's state formation was little influenced by Norway and represents a primary state development within a secondary context. The transition from chieftdom to state in medieval Iceland, therefore, is viewed through a localized lens focused sharply on the mounting social tensions of the 13th century that culminated in a civil war between two powerful families. These tensions stem from several sources; a change in climate coupled with the mismanagement of farming practices and the subsequent dire and irreversible anthropogenic alterations to the landscape are often presented as the primary agitators.² The result of this depleted ecosystem was a scarcity of land and resources so harsh as to spark the consolidation of the once stable network of chieftdom polities into a single centralized authority, an innovation that subsequently united all of Iceland under a shared set of laws, ideology, and economic enterprise focused on livestock agriculture.

The primary issues that emerge from the discussion of environmental degradation and social change in medieval Iceland are land productivity and the ability to sustain an agro-pastoral economy. Byock³ has suggested that the productivity of land decreased within a few hundred years after the initial settlement, as overgrazing generated the onset of severe soil erosion in the

1 Karlsson (2000, 15).

2 Edwards et al. (2004); Mairs et al. (2006).

3 Byock (2001, 43–62).

highlands. Friðriksson⁴ and Thorsteinsson et al.⁵ have concluded that erosion and a decline in soil productivity stemming from overgrazing in tandem with a decrease in the annual temperature resulted in a potential decline in grass yields. Dugmore and Buckland,⁶ Smith⁷ and Sveinbjarnardóttir⁸ have maintained that a decrease in productive grass pasture in the highland areas is correlated to an overall decrease in land productivity and a sharp decline in the overall pastoral economy throughout the island. As in other island environments, these effects were all more dire and rapid than they would be in a mainland context, as the prospects for moving into new areas to help alleviate the strain on the ecosystem were extremely limited.

Evidence for environmental change is unquestionable; what is unclear, however, is whether Iceland's 'islandness' produced elements of social change similar to those often cited for Polynesia, where embryonic state institutions were set in motion through localized processes, or whether Iceland's social developments were framed by the global political activity of economically motivated actors both within the island and between Iceland and other island societies throughout the North Atlantic and Scandinavia. I will argue here that we must revisit the question of whether it is truly possible to divorce Icelandic state formation from global political and economic activities in which Icelanders potentially played a role, without losing sight of the opportunities and constraints set in place by environmental conditions. This approach speaks to not only the Icelandic case study, but also to the local processes at play secondary state formation, processes that are frequently overlooked in most traditional models.

Using a threefold methodological approach that incorporates archaeological, textual, and geomorphological evidence,⁹ in this chapter I will present data from two regions in northern Iceland: Mývatn and Skagafjörður. The data from Skagafjörður are part of my primary fieldwork, while those from Mývatn are from the ongoing NABO¹⁰ project. From this comparison, I will argue that lowland and midland sites in Skagafjörður demonstrate a general increase in

4 Friðriksson (1972).

5 Thorsteinsson et al. (1970).

6 Dugmore and Buckland (1991, 147–159).

7 Smith (1995, 331–339).

8 Sveinbjarnardóttir (1992, 1; 4).

9 French (2003); Garrison (2003).

10 The North Atlantic Biocultural Organisation (NABO), led by an international team of scholars and students, was founded in 1992 and has carried out research projects through the North Atlantic (McGovern 2004). The NABO project in northern Iceland began in 1996 and includes the work first and foremost of Thomas McGovern (CUNY), Andrew Dugmore

land productivity over time, as an augmentation in soil deposition created a situation for potential enrichment in grass yields. These data, I will demonstrate, should urge archaeologists to reconsider the social implications of environmental change, as alteration does not necessitate disaster. For Iceland, an increase in land productivity during the 12th century challenges environmental scarcity models used to understand the transition from chiefdom to state, and suggests that at least in some regions, state formation was shaped by alternative factors, such as trade and surplus production, two variables often overlooked in current research.

2.1 Insular Communities and Island Environments: Autonomous Secondary State Formation

Theories on autonomous secondary state formation follow the same lines as those proposed for primary state evolution, often treating the fact that these societies existed in a world of neighboring states as inconsequential. When these models are used to examine the transition from chiefdom to state, whether in a primary or a secondary context, they frequently stress that the state originated as a solution to inherent structural instabilities observed in chiefdoms.¹¹ The source of this instability is its political economy,¹² which is overwhelmingly defined by the practice of redistribution, a system where food and/or goods from separate households of the community are brought together and then redistributed by chiefs or other elites according to fixed social rules. In a redistributive economy, the goal of a chief is to amass a surplus; once amassed a chief is pressured to give it all away or, at the very least, to appear as a kind of 'tribal banker', funneling some of these resources back into community programs.¹³ This apparent contradiction in the political economy ultimately restrains a chief's ability to further the personal campaign for territorial expansion and economic growth, resulting in a social process that Flannery¹⁴ and Spencer¹⁵ refer to as chiefly cycling: interludes of instability between

(CUNY), Ian Simpson (University of Stirling), Sophia Perdikaris (CUNY), Gavin Lucas (University of Iceland), and Karen Milek (Aberdeen), to name just a few.

11 Flannery (1998).

12 I use the term political economy to describe modes of "production, circulation, accumulation and consumption of goods, services, and values" (Preucel and Hodder 1996, 99).

13 Earle (1991, 2).

14 Flannery (1999, 4–5).

15 Spencer (1998, 10).

periods of greater social complexity. All of these constraints place a ceiling on the degree of social complexity found among chiefdom organizations, *pushing* societies to either develop state level authority or to dismantle their systems of intensified power and social inequality. This ceiling is delineated by the presence of three interrelated variables: a social structure that fosters a healthy competition between elites; the availability of profitable and, preferably, restricted access to resources that elites can use to fuel their campaign for power and high status; and the ability to diffuse tension and promote order in a society that lacks formal legal institutions. These variables are all the more pronounced within island environments, as thresholds are reached at an expedited rate. Case studies from islands are a favored research subject for evolutionary studies, which place environmental conditions at the forefront of the list of possible candidates driving social change.¹⁶ This focus stems from the apt consideration of an island's finite quantity of available land and resources; even a small fluctuation in the ecology could spell large-scale social consequences.¹⁷

A classic example of how this intersection between island ecology and redistributive economy can evolve into state-level institutions is pre-contact Polynesia.¹⁸ Despite Polynesia being spread over more than a thousand small and large islands, there was a high degree of cultural continuity between these island communities, as they were all colonized by settlers from Melanesia who brought with them a shared cultural repertoire.¹⁹ This transported social landscape included a subsistence strategy designed to feed large populations through agricultural intensification, a task achieved through a healthy atmosphere of competition among established and aspiring elites. However, as ecological conditions varied from island to island, this strategy was met with success in some cases and complete failure in others. This differential success makes the Polynesian islands a rare and insightful opportunity to construct models for the circumstances under which ecological conditions can spark evolutionary change. In examining Iceland, I will turn to the analysis of archaeological and environmental data from Polynesian as model for examining the development of island complexity within a set of environmental constraints.

¹⁶ Redman (1999).

¹⁷ Rappaport (1978).

¹⁸ Contact between Polynesian and Western societies began as early as the 16th century with a number of Spanish voyages, but the bulk of contact was carried out in the late 18th century with heightened French and British naval exploration.

¹⁹ Goldman (1970); Kirch and Ellison (1994, 310–316).

2.1.1 *Chieftdoms on the Road to States: Competition, Environment, and Political Economy*

The one aspect shared by all Polynesian societies – and not found in their Melanesian predecessors – is their innovation of a centralized political agent: the chief. In contrast to Melanesian Big Men,²⁰ whose sole power derived from their ability to persuade individuals to do as they asked, chiefs held power *and* authority that was backed by the formal political office of the chieftaincy. Part of a chief's authority placed him in charge of the political economy, which was fueled by numerous avenues of acceptable competition. Competition was crucial to this system: it ensured that in exchange for their support, the followers of a chief could trust that their leader would be mindful of their interests lest they transfer their support to a rivaling leader. Throughout Polynesia, competition among elites, especially chiefs, stemmed from the ultimate source of chiefly authority: social relationships. Brokered through 'gifts' of land, luxury goods, and other valued resources, social relationships are the material manifestations of a chief's authority and expressed power. In exchange these gifts incur a social debt to be paid off by a chief's supporters by providing additional goods and services, which can then be filtered back into the redistributive economy to maintain and create new social networks.²¹ As social relationships are fluid and prone to change, a chief's continued success depends heavily on the loyalty and support of their retinue. This limitation creates an ephemeral power base that must be constantly reinforced through elaborate ceremonies and the appeasement of rising elites who may try to force a chief out of power.²² If a chief fails to maintain the political economy, that chief can be quickly replaced by a more capable aspiring chief. In the end, chiefs often fall prey to their own success at acquiring as many supporters as possible, only to have to turn around and invest so heavily in their supporters to order to ward off any rivals that they found themselves forever in debt rather than in making a profit.

All of this brokerage can limit the personal wealth of a chief – the costs of maintaining social relationships offset attempts at aggrandizement. On the other hand, competition could also create a setting for developing systems of stringent control over resources that are managed by elites, paving the way for

20 A 'big man' refers to a highly influential individual who can be called upon to temporally assume political leadership as needed by their community (Sahlins 1963). Although the position can bestow respect and status, there is no formal political office associated with these positions; big men have no political authority and thus lack guaranteed rights and privileges.

21 Godelier (1999); Mauss (1925).

22 Earle (1997, 13).

the key features of budding state-level institutions.²³ For example, competition and the fear of usurpation in Hawaii were met with tactics for gaining control over not only access to luxury goods but also staple products by regulating and encouraging surplus production through a complex system of land tenure.²⁴ To accomplish this task, a chief had to control the labor and production of households within his domain, usually achieved by convincing his people that it was necessary for him to collect and store a surplus of goods as a reserve against potential bad times. As Malo writes:

Store-houses were designed by the [chief's executive] as a means of keeping people contented, so they would not desert the [chief]. They were like the baskets that were used to entrap the *hinalea* fish. The *hinalea* thought there was something good within the basket... In the same way people thought there was food in the store-houses, and they kept their eyes on the [chief].²⁵

Just as a fisherman lures in his prey by tempting him with irresistible bait, so, too, do chiefs – their lavish displays of wealth and power attract the attention and veneration of followers with little more than the promise of reward. Chiefs, therefore, are preoccupied with the protection of their best interests, occasionally providing staple and prestige goods to their followers, but with the scales of wealth and power always heavily tipped in favor of the chief. In this way, the reorganization of land and labor in Hawaii led to greater wealth and power for elites and, in some islands, the marginalization of commoners.

A chief's or aspiring elite's ambition, however, can be severely curbed by a scarcity of resources.²⁶ A shortage of resources can be the result of a number of variables, including warfare or a loss of trade connections, but more often than not, traditional evolutionary models stress environmental factors, whether natural or human-induced. While ecologically driven scarcity can be combated in foraging and horticultural societies through fissioning, as was the case in Melanesia, this is hardly a viable option for Polynesian societies. The latter are better suited to intensified agriculture, which requires individuals to invest heavily in land enrichment projects that are not readily abandoned even when environmental or social conditions have diminished the

23 Dietler (1996); Hayden (1995, 1996).

24 Earle (1978, 139).

25 Malo cited in Sahlins (1963, 296).

26 Cohen (1981, 87–89; 94–97); Johnson and Earle (1987, 246–248).

returns on the productivity of the land.²⁷ This inability to alleviate pressure on the environment can become a point of bifurcation in the authority and power of a chief: either they will be able to convince their followers that they can guide the society out of a crisis by opening up their storehouses and dispensing crucial resources, or the system will collapse altogether.²⁸ When environmental conditions set limits to social control, or to the continued ability of the “economic system to yield sufficient surplus, chiefly power will be undermined.”²⁹

These two possible paths can be seen in the ecological differences between the Marquesas and Hawaiian islands. The Marquesas are a prime example of how the authority of chiefs could be destabilized as a result of environmental degradation. As with other Polynesian societies, the arrival of human settlers into the Marquesas ushered in a transformation of the landscape to make it suitable for intensified agriculture. Specific to Marquesan society was a heavy reliance on arboriculture, principally the cultivation of breadfruit trees.³⁰ Breadfruit yields seasonally, necessitating the storage and the development of a storable breadfruit paste (*ma*) to supplement leaner agricultural periods. Initially, chiefs in the Marquesas held a high level of power in the society, and as long as breadfruit trees could be harvested and *ma* produced, a chief's power arguably went unchallenged. Part of the logic behind the initial success of Marquesan chiefs rests on the notion of capital investments,³¹ motivated by two factors: first, the amount of cultivable land in these island geographies was limited;³² and second, households who have made intensive labor investments, which may have long-lasting assets, were not easily relinquished.³³ Households may consider paying tribute to a chief in exchange for continued access to these lands a viable and profitable arrangement. This situation might have been particularly salient in the Marquesas, where breadfruit was the dominant subsistence produce. Breadfruit trees on average take five to seven years to start producing fruit, whereupon the benefits are substantial – a single breadfruit tree is capable of producing an annual crop of 170 fruit, for over fifty years.³⁴ Competition over rights to these trees has the potential to be intense;

27 Gilman (1981, 6).

28 Cf. Tainter (1988).

29 Kirch (2000, 323).

30 Kirch (1991, 128).

31 Earle (1978, 182–185).

32 Kirch (2000, 255).

33 Gilman (1981, 7).

34 Wilder (1971, 11).

if a chief is unable to ensure rights to access to these trees among his followers, his authority would be rightly challenged. If a tree is destroyed, for instance, during a raid, the recovery and investment time for a household is not one growing season, but five or seven, making the relationship between chief and follower all the more intense. Ultimately, this delicate balance came unraveled as repetitive episodes of drought destroyed breadfruit crops; as chiefs were unable to end these droughts, their authority was undermined, providing an opportunity for usurpers to seize power.³⁵ As the authority of chiefs diminished, the power void was filled by a new class of ambitious priests and warriors, creating a fluid system of competition among rivaling factions and an inability to form stable complexes of either chiefly or state institutions. In the end, Marquesan societies vacillated between periods of greater social complexity that closely reached the level of a state, and periods of decline and chaos accompanying each wave of new classes of elites – a prime example of chiefly cycling sharply defined by ecological limitations.

Hawaii, however, followed a different trajectory. Hawaiian chiefs were less limited by a fragile and precarious ecosystem;³⁶ their authority was thus less subject to frequent challenges by ascendant elites. When ecological shortages did occur, chiefs were typically able to convince their followers that they could help them weather the storm by providing goods from their personal storehouses, and could even appear to end these episodic crises by performing rituals to appease the wrath of the gods. All a chief asked for in return was support, in the form of agricultural goods and services such as labor and military assistance, which ultimately set a chief socially apart from everyone else, creating systems of inequality and marginalization. As with the Marquesas, one of the economic motivations for commoners to comply with this asymmetrical social structure was the capital investments they had made in the transformation of the landscape. The subsistence of households depended largely on taro, which required labor-intensive irrigation projects; sweet potatoes, which were grown through methods of dry agriculture but still needed their fields to be cleared and mounded on a regular basis; and fish, which required the building of labor-intensive ponds.³⁷ However, unlike the Marquesan chiefs, pre-contact Hawaiian chiefs were more likely to be able to ensure the continuation of the subsistence and political economy, in part because ecological conditions were more favorable. Hawaiian chiefdoms were, therefore, far more stable than those found in the Marquesas, allowing for Hawaiian chiefdoms to outlast

35 Kirch (1991, 142).

36 Kirch (2000, 324).

37 Earle (1978, 184–185).

those in the Marquesas. Yet Hawaii ultimately became a secondary state in 1810 under the leadership of its first king, Kamehameha. Few would have predicted Kamehameha's rise to power; while he came from an elite background, his family had been far from influential on the Hawaiian mainland.³⁸ Prior to Kamehameha's startling rise to power, a number of prominent families had already achieved tremendous wealth and power, establishing themselves as 'paramount chiefs' who governed over large regional territories. Paramount chiefs had pushed Hawaiian society closer and closer to a centralized political structure, but still it was an outsider who united the separate Hawaiian islands into one kingdom. There were no ecological disasters that marked Kamehameha's ascendancy, and by all accounts Kamehameha's success came with his ability to align himself with European colonial powers in the Pacific, using Western trade goods to broker local alliances and Western military technology to conquer those who refused his political friendship.³⁹ Is it merely a coincidence that within thirty years of Western contact⁴⁰ Hawaii became a secondary state?⁴¹ Or was it elite control over the rich agricultural lands that allowed the limitations of chiefdoms to be breached, igniting the development of state-level dynamics? Polynesia demonstrates that the path to state-level complexity is one with many twists and turns, as no single avenue can ever guarantee greater social complexity. I would argue as well that while ecological variables were crucial to the development of Polynesian social complexity, we cannot rule out the role of trade and contact with other societies as sources of influence.⁴² If scarcity is a concern within an island society, it stands to reason that one solution not considered in the previous examination is how trade can help alleviate shortages. Local as well as long-distance trade are well documented in ethno-historical case studies of chiefdoms, as these activities easily play into a redistributive economy and the need for elites to broker social relationships. Trading activities as well as local surplus production must therefore be considered in the context of both primary and secondary state development.

38 Flannery (1995, 5–14).

39 Friedman (1985).

40 Captain James Cook of the British Royal Navy first made contact with Hawaii in 1778 A.D. Sahlins (1985) credits Hawaii's westernization and state formation to the fact that the islanders came to see Cook as a god, but Friedman (1985), rightly in my opinion, points out the dominant role played by a new trade network not only in the centralization of power in Hawaii, but also in the rise of a new class of elites and ultimately in structural change.

41 Sahlins (1985).

42 See also Friedman (1985).

2.1.2 *Polynesia and Iceland*

The Marquesas and Hawaiian islands provide two distinct models for examining secondary state formation within island environments, prompting comparisons with Iceland. Iceland shares several traits with Polynesia: colonization and the transportation of a physical and social landscape; continual push for the colonization of other islands;⁴³ phases where the ceiling for fissioning and island colonization was reached; circumscribed and controllable resources; differences in ecological zones that relegate agricultural intensification to a few specific geographic areas; social systems that rest on the ability of individuals to make and maintain social alliances, grounded in the ability to intensify an agricultural resource base; continual competition between chiefs and other elites, with the periodic development of new classes of elites (*storgoðar* in Icelandic); and the consolidation of political power and the development of regional or paramount chiefs (*riki* in Icelandic).

As with studies of Hawaii, studies of Iceland often neglect an important factor: the development during the early phases of settlement of a complex system of trade for prestige goods and the later commercialization of subsistence goods sold at both local and global markets. As with the Marquesas, anthropogenic degradation instead has been presented as the driving factor in the collapse of chiefdoms and the development of a single central authority figure in Iceland. According to this view, a steady and profound decrease in land productivity and ensuing land scarcity resulted in the degradation of the already precarious, marginal medieval Icelandic landscape; resource scarcity galvanized into violent tensions among elites, with the victors able to out-compete their rivals by attracting more followers through lending subsistence support to households in need. Ultimately, one family gained control and united the entire island, but could only maintain this position with the support of allies in Norway, at the expense of Iceland's political sovereignty. State institutions, however, are seen under autonomous models as entirely a local, Icelandic innovation; Iceland's political connection to Norway came after the institutions were already in place, suggesting that Iceland's social complexity was the result of solely autonomous processes.

While we will question the degree of Iceland's insularity throughout the medieval period (see chapters 6 and 7), we must first scrutinize the characterization of environmental degradation and resource scarcity as the main engine of social complexity. This question can be resolved by investigations of soil accumulation rates, pollen distribution analysis, and a reexamination of

43 The Norse in Iceland began to establish additional colonies in Greenland by 950 A.D. and Vínland by 1000 A.D.

carrying capacity levels. In what follows, I will present new soil morphological data that suggest that Iceland did not surpass a critical threshold of resource availability, suggesting that as with Hawaii, we must look beyond the environment for the agents of state development in the 12th and 13th centuries.

2.2 The Physical Landscape

Iceland is a volcanic island of about 103,000km² (40,000 square miles) on the Mid-Atlantic Ridge. Despite its name and location, temperature in Iceland is kept fairly moderate by the North Atlantic Drift of the Gulf Stream.⁴⁴ The climate of Iceland can be characterized as oceanic and moist, with mild winters (mean temperature in the lowlands is between -2 to 2°C and -8 to -2°C in the highlands) but cool summers (mean temperature for the lowlands is 9 to 12°C and 6 to 9°C in the highlands). The physiography of Iceland is often described as a contrasting landscape of fire and ice, as much of the topography of the island is shaped by active volcanism and glaciation that render only one fourth of the island habitable.⁴⁵ Volcanic eruptions on average have occurred every four to five years throughout the Holocene, producing volcanic soils basaltic in origin.⁴⁶ Icelandic soils are classified as Andosols, with perhaps the largest area of Andosols in Europe and possibly greater than five per cent of all the Andosols in the world.⁴⁷ Today, Icelandic Andosols can be classified into seven soil types: Histosol, Histic, Gleyic, Brown, Vitrisol, Cryosol, and Leptosol (see Table 2).

Histosol, Histic, Gleyic, Brown, and Vitrisol Andosols make up most the soil in Iceland, and most regions in Iceland are characterized by a combination of these Andic soil types.⁴⁸ Histosol and Histic soils are characterized by their high organic content, are usually black to dark brown in color, have a relatively high sand fraction (>40 per cent), and are often found in areas with poor drainage, most commonly peat bogs.⁴⁹ Gleyic soils have less organic content, are usually gray-brown in color, are characterized as having high water retention correlated with a relatively high clay fraction (>10 per cent), and are often found near wetland areas.⁵⁰ Brown Andic soils are typified by percentages of organic

44 Guðmundsson and Kjartansson (1984, 6–7); Hjálmarsson (1993, 6).

45 Guðmundsson (2007).

46 Arnalds (2004, 4–5).

47 Ibid., 1–5.

48 Arnalds (1999).

49 Arnalds et al. (1995, 164).

50 Arnalds et al. (1995, 162); Arnalds (2004, 9).

TABLE 2 *Classification of Icelandic Andosols*

Soil type	Symbol	Icelandic term	Criteria	Soil taxonomy	WRB*
Histosol	H	Mójjörð	>20% C	Histosol	(Andic) Cryic Histosol
Histic	HA	Svartjörð	12–20% C	Aquand	Gleyic and Histic
Gleyic	WA	Blautjörð	1–12% C, redox features	Aquand	Gleyic
Brown	BA	Brúnjörð	1–12% C; > 1% Si	Cryand Udand	Haplic
Vitrisol	V (sw)	Frumjörð	<1% C	Cryand	Arenosol and Vitric
Cryosol	C	Frerajörð	Permafrost	Gelisol	Cryosol
Leptosol	L	Bergjörð	Shallow	Entisol	Leptosol

* World Reference Base for Soil Resources

material similar to those of Gleyic soils, but with a high silt fraction (>40 per cent) and lower water retention capacity.⁵¹ Brown Andic soils are commonly found in well-drained rangelands and are often thought to be highly productive by modern Icelandic farmers,⁵² but are also prone to erosion as they have a lower density than Gleyic soils.⁵³ Vitrisol Andic soils are distinguished by their lack of organic material, are usually yellow-brown (more rhyolitic composition) to black (more basaltic in composition) in color, have a high sand fraction (>60 per cent) and low water retention, are highly prone to erosion and are hence found at shallow depths, and are found near active volcanic regions. Regional soil classifications are not static; soil types can be augmented and transformed. For example, the addition of vegetation coverage can transform Vitrisols into Brown Andosols, while the addition of silt to Histosols and Histic soils can create Brown and Gleyic soils.⁵⁴ Agriculturally, a soil complex of Brown and Gleyic Andosols (BA/WA complex soils) is considered highly fertile, since these soils typically have substantial organic carbon contents and adequate drainage, and are less friable and therefore more resistant to erosion.⁵⁵

⁵¹ Arnalds (2004, 12).

⁵² Ólafsdóttir and Júlíusson (2000, 454–457).

⁵³ Arnalds (2000, 18–22).

⁵⁴ Arnalds (2004, 10–11).

⁵⁵ Óskarsson et al. (2004, 226); Waateringe and Robinson (1988).

2.3 Land Degradation and the Norse Colonization of Iceland

Settlers arriving in Iceland in the late 9th century brought with them a transported landscape, derived from their Norwegian homelands, which centered on animal husbandry. Cattle, sheep, horses, goats, and pigs were immediately introduced into an environment with no native predators.⁵⁶ These animals taken together form a 'Landnám package' that required substantial acres of rangelands.⁵⁷ In addition to livestock rearing, Icelanders relied on a flexible economy of both wild and domesticated resources. Iceland, however, had fewer wild resources than other North Atlantic colonies; there were no caribou or polar bears and only minimal seal and walrus populations. The small arctic fox is the only native mammal native, and while it was hunted, it was probably never an essential resource. On the other hand, Iceland did have large colonies of birds, especially puffins, and its rivers teemed with fish. Edible plant species were equally limited, consisting of a few varieties of berries and a few leafy plants. As in other Norse North Atlantic colonies, diet was closely correlated with social status, as wealthier individuals relied less on wild resources for subsistence.⁵⁸

Prior to Norse settlement, the landscape of Iceland consisted of a network of dense scrub birch and dwarf willow forests intersected with grassy meadows in the highlands, which were thought to have been settled first,⁵⁹ and a patchwork of wetlands and forests in the lowlands.⁶⁰ To meet the needs of their agro-pastoral economy, the Icelanders burned down large tracts of forest and began to drain the extensive networks of bogs that covered most of the lowlands. While grain could be grown in some areas in the south,⁶¹ Iceland quickly organized its economy around cattle and sheep production. Therefore, the crucial component for all farms was grass. The ability to produce enough grass to be made into hay in sufficient quantities for winter fodder determined the amount of livestock a farm could sustain. In the winter months, farmers relied on stored hay for feeding livestock, but could supplement their diet through 'winter grazing',⁶² as grass continues to grow during the winter albeit

56 Jóhannesson (1974, 288).

57 Amorosi et al. (1997, 501).

58 Amundsen (2004).

59 The survey data collected for my research, however, suggest that the lowlands and highlands were settled at roughly the same time (see Chapters 5–7).

60 Caseldine et al. (2004); Smith (1995, 319); cf. Vésteinsson (2001).

61 Simpson et al. (2002, 423–443).

62 Simpson et al. (2004); Smith (1995, 329).

at a reduced rate. The strategy for livestock subsistence during the winter months combined grazing and foddering. For the summer, livestock subsistence was accomplished almost entirely through grazing. During the Settlement period, the Medieval Warming Trend allowed for high grass yields, resulting in a steady increase in both livestock and human populations.⁶³

This bountiful environment, however, was not durable. Many scholars would attribute the growing tensions and factionalism of the 13th century to climate- and human-induced deterioration in land productivity, alongside greater power and control by a select group of elites who could stave off resource (especially hay) shortages by opening up their reserve storehouses. The logic of this argument suggests that, as land became scarce, population pressure created severe tensions and competition for resources, resulting in greater dependency on chiefs for additional hay reserves. As the population steadily grew throughout the medieval period, more grass pasture was needed, spurring more forest clearing projects; thus, “after a few generations of rapid deforestation [scrub bushes] and extensive livestock raising the productivity of the land began to decline.”⁶⁴

The first wave of degradation began in the highlands. Pollen analysis illustrates a sharp decline in birch trees and an increase in grass and heath within a hundred years of settlement.⁶⁵ “On the European continent grazing often created permanent grasslands, but in Iceland it was mostly devastating to the environment.”⁶⁶ With the forests cleared and a high degree of overgrazing, there was little organic material left on the surface to hold onto the soil. This ‘ovigenic landscape’ initiated an erosional regime that removed highland topsoil, which could then be transported by wind action down slope and dumped unevenly onto the lowlands.⁶⁷ The highlands, now denuded and suffering from severe erosion, became unproductive for grazing. Smith has argued that erosional patterns in the highlands also resulted in a decrease in land productivity in the lowlands by precipitating an increase in waterlogging and poor drainage.⁶⁸

To make matters worse, in addition to these negative anthropogenic alterations, a change in the climate also precipitated a decline in land productivity. Throughout the 11th and 12th centuries A.D., the temperature began to drop, as

63 Byock (2001, 46–55).

64 Byock (1988, 55).

65 Amorosi (1992); Buckland et al. (1990); Caseldine et al. (2004).

66 Byock (2001, 84).

67 Dugmore and Buckland (1991, 499).

68 Smith (1995, 338).

the onset of the Little Ice Age (LIA) took effect.⁶⁹ As the climate grew colder, the amount of drift ice from Greenland steadily increased, further intensifying the colder conditions for the inhabitants of Iceland. The onset of the LIA in Iceland precipitated a decrease in the overall temperature, resulting in the inability for grass crops to complete their growing cycle as the critical level of accumulated temperature needed for a season was not met.⁷⁰ Bergthórsson argues that the growth of grass depends heavily on temperature, and for Iceland, winter temperatures are especially important.⁷¹ Although the summer temperatures may seem to be the pivotal factor for hay-making as grass is harvested in the summer, Bergthórsson posits that the overall average temperature from September to October is the most crucial, as this period is the most fragile time in the life cycle of grass seeds. From data collected from modern farms, Bergthórsson suggests that a decrease in the temperature by 1°C will result in a 15 per cent decrease in hay yield, which in turn will result in a 15 per cent decrease in the number of livestock. The decrease in livestock will in turn lead to a 10 per cent decrease in the human population. A decrease in the ability to grow sufficient grass for hay is only part of the havoc wreaked by a drop in the temperature – the colder temperatures also reduce winter grazing, thereby increasing the reliance on the decreasingly available hay. Thus, a decrease of 1°C will increase the amount of hay needed for the winter months by 15 per cent. When we factor in the decrease in the winter grazing, the estimated loss of livestock is 30 per cent, subsequently leading to a 20 per cent decrease in the human population.⁷² The overall drop in temperature during the LIA in Iceland was 2 to 3 degrees Celsius, thereby reducing the productivity of pastures by as much as 50 to 60 per cent in the course of a few bad summers.⁷³

If we follow a strict environmental-determinist scenario, irreversible anthropogenic changes to the landscape and an adverse change in the climate destroyed the fragile Icelandic economy, and it was only a matter of time before the inhabitants would no longer be able to meet their subsistence needs. A drop in overall temperature made it impossible to produce enough grass to fodder livestock through the winter. As grass production decreased, so too, did the number of livestock. Abandoned to the mercies of the hostile climate and a denuded landscape, the Icelanders entered a downward spiral of starvation and social upheaval as commoners became entirely dependent on

69 Buckland (2000, 146–147); Sveinbjarnardóttir (1991, 161); Vésteinsson (2000a, 166).

70 McGovern et al. (1988, 234); Ogilvie (1984a, 2000).

71 Bergthórsson (1985, 113–119), (2000, 264–269).

72 Bergthórsson (1988a, 389–392).

73 McGovern (1991, 86).

elites for access to vital resources. Ultimately, the strain of this dependency led to escalated forms of competition, which proved unsustainable in the already dire environmental conditions. In the end, Icelandic chiefdoms could no longer maintain their social system, and were left prey to the ambitions of a new class of elites, the so-called *storgoðar* (big chiefs) who consolidated their power through the development of regional or paramount chieftaincies called *ríki* (see also Chapter 1). In the end, one family from this new class of elites would unite all of Iceland, transforming the Icelandic political landscape from a group of chiefdoms to a unitary state.

Several assumptions in the preceding hypotheses on environmental change in Iceland need to be further addressed: first, that social collapse is positively correlated with a decrease in temperature and the onset of the LIA; second, that prior to human occupation the ecology of Iceland was unaffected by erosion; third, that farmers exceeded the land's carrying capacity by attempting to graze too many cattle and sheep; and fourth, that alterations to the landscape affected all of Iceland equally.

2.3.1 *Decrease in Temperature*

Bergthórsson asserts that a recurring topic in Icelandic history is “the constant struggle between man and nature – a history in which the impact of climate on society is an unbroken theme.”⁷⁴ As Bergthórsson demonstrates, there is a correlation between temperature and grass growth; from this correlation one can then calculate the potential loss in livestock and human populations.⁷⁵ Bergthórsson's calculations are an estimation of the potential impact a colder climate will have on a population; however, it does not necessarily follow that these percentages can explain rising social tensions in the 13th century. The primary concern in using Bergthórsson's study for examining medieval Iceland is that climatic data have not sufficiently demonstrated that the temperature had decreased during the Commonwealth period. There are, in fact, conflicting opinions as to when and where the LIA occurred.⁷⁶ The primary dataset for the examination of climatic variation during the LIA are GISP ice-core records; however, one can analyze several different aspects of an ice-core, including stable isotopes, dust content, and chemical composition. While Ogilvie and Jónsson view these different lines of evidence as a means to contrast and complement one another, they observe that these independent datasets often produce different chronologies for the LIA, leading to debate

74 Bergthórsson (1988a, 389).

75 Bergthórsson (1988b, 2000).

76 Ogilvie and Jónsson (2001, 10).

over the precise beginning and end dates of the LIA.⁷⁷ For example, Dansgaard⁷⁸ dates the onset of the LIA to the late 13th century while Dahl-Jensen et al.⁷⁹ suggest the LIA did not occur until the mid-16th century.⁸⁰ Although a difference of a few hundred years may be less significant for the purposes of global climatic research, it matters tremendously when the data are applied to the archaeological record. More recent ice-core analysis suggests that the onset of the LIA, at the earliest, occurred in the mid-14th century.⁸¹ Therefore, climatic change hit Iceland about a hundred years *after* its social collapse, and therefore cannot be the cause of collapse.

Equally faulty is the juxtaposition between the temperature bliss of the Little Climatic Optimum and the temperature fluctuation thought to have occurred by the time of social upheaval. While the Little Climatic Optimum can be characterized as a period of mild weather, temperatures during this period were not static.⁸² Throughout the medieval period, temperatures in Iceland fluctuated. This fluctuation would not have been startling even to the original settlers – arriving from Norway and the British Isles they would have had previous experience in learning to cope with the possibility of a harsh winter or colder-than-average summer.⁸³ If a correlation exists between a decrease in temperature and an increase in social friction, one should be able to document a decline in temperature in the late twelfth–early 13th century. However, Ogilvie⁸⁴ suggests that the early 12th century saw more cold seasons (39 per cent) than the late twelfth–13th century (10 per cent).

One way out of the dilemma of lacking the ability to document a precise date for the onset of the LIA or to determine the severity of a colder climate in the 13th century has been to use historical texts to suggest that variability, rather than overall temperature, was the cause of social collapse.⁸⁵ The severity of the proposed 13th-century cold period is sometimes reconstructed using historical Icelandic accounts of cold periods and the presence of drift ice from the 16th through the 19th centuries. These detailed accounts document the duration of winter, the duration of cold spells, and the devastating effects of the cold on grass growth and livestock and human mortality: “At this same

77 Ogilvie and Jónsson (2001, 13–15).

78 Dansgaard (1964).

79 Dahl-Jensen et al. (1998).

80 Cf. Ogilvie and Jónsson (2001, 15).

81 Ogilvie and Jónsson (2001, 16); Slötter et al. (1999).

82 Grove (1988); Lamb (1984).

83 Ogilvie (1990, 234).

84 *Ibid.*, 247.

85 Byock (2001, 57); Grove (2001).

time many severe winters came at once and following them people died of hunger.”⁸⁶ These accounts also suggest that the presence of drift ice was highly variable:

The ice is always to be found between Iceland and Greenland although sometimes it is absent from the shores of Iceland for many years at a time... Sometimes it is scarcely to be seen for whole decades or longer.⁸⁷

Historical accounts, used properly, can complement climatic and archaeological data. These accounts demonstrate variability in the climate and the potentially dire impact of cold winters on Icelandic society. Of course, as in any society, cold temperatures undoubtedly had some effect on Icelandic sustainability and economy, but we cannot assume that the individual events described in the historical records, such as those presented above, are a fair representation of the 13th century as a whole. We must also avoid the assumption that climatic variations impacted all of Iceland equally. Iceland consists of two ecological regions: the north and the east comprise one zone; the south and the west comprise the other.⁸⁸ The northeast tends to have lower temperatures than does the southwest. At a micro-level, variation has been found even between farms within the same district:

Snow, for instance, collects more easily and stays longer in certain localities and on the fields of certain farms than elsewhere. Similarly, alternative thawing and freezing in the spring (winter kill) can affect seriously the productivity of hay fields, and such very short-term fluctuations need not occur simultaneously throughout the country but vary even within districts.⁸⁹

Variation in temperature exists not only through time, but also within and between regions (for a more specific example, see discussion on Hjaltadalur in Chapter 5).

Missing from these discussions on the social impact of climate is a consideration of risk abatement and the possible steps individuals may have taken to cope with an increasingly colder climate. Deterministic theories often imply that human societies are inflexible, and therefore are powerless to respond to

86 cited in Ogilvie (1984b, 141) from an unknown source.

87 cited in Ogilvie (1984b, 143) from Qualiscunque 1580s.

88 Gunnarsson (1980).

89 Eggertsson (1998, 7).

the destructive impact on the social structure caused by any external change, such as climate. In Iceland's historical record, however, several social strategies to combat fluctuations in agricultural productivity have been documented. The *Grágás*, a book of laws written in the 11th or 12th century, suggests that medieval Icelandic society had devised a series of mechanisms for creating buffers against poor grass yields. The *Grágás* states that when a farm is unable to support its household, aid should be sought from other kin; if, however, extended family support failed, the community (*hreppur*) was to provide the safety net. Membership in a *hreppur* was universally obliged and fines were legally imposed on people who did not pay their share of taxes to the *hreppur*.⁹⁰ According to the *Grágás*, poor families were assigned to neighboring farms for specific periods of time, or until their situation improved. The community, therefore, was required to aid members in need. The *Grágás* also made provisions for farmsteads accidentally burning down, stating that the community should pay for half of the damages incurred to the homestead, but stipulates that the same person can claim compensation only three times. The *Grágás* also stipulated that farms that suffered losses of at least one-fourth of their livestock were to have half of the loss replaced by the community.⁹¹ The *Grágás* illustrates that medieval Iceland had developed an insurance policy against risk: the *hreppur*. The sagas also stress a concern for balancing the number of livestock with the amount of fodder available for the winter.⁹² Numerous sagas relate stories of greedy farmers attempting to keep too many cows alive through the winter, only to have their ambitions met with hunger and death. The sagas demonstrate that medieval farmers were not unaware of the possible fluctuation in grass yield, and the *Grágás* shows that measures were taken to accommodate for potential accidents and poor decisions.

2.3.2 *Pre-Landnám Erosional Patterns*

Through geomorphic and remote sensing analysis, Ólafsdóttir et al. have identified in Iceland three significant periods of land degradation caused by erosion.⁹³ Two of the three phases occurred prior to human settlement. They conclude that land degradation is possible without anthropogenic influence and suggest that Iceland has always been geologically dynamic and active. Land degradation did occur shortly after human settlement, but they do not identify it as significant, or catastrophic.⁹⁴ They argue that land degradation caused by

90 Eggertsson (1998, 8).

91 Ibid., 9; *Grágás* (2000).

92 Eggertsson (1992, 1998, 18).

93 Ólafsdóttir et al. (2002).

94 Ólafsdóttir et al. (2002, 164).

livestock rearing reached a catastrophic level in the 16th century, when some areas in eastern Iceland were pushed beyond the threshold of recovery.⁹⁵ Guðbergsson has also found evidence for soil erosion prior to human settlement⁹⁶ and argues that soil accumulation rates in northern Iceland were very slow prior to human occupation, indicating that there was very little soil growth in prehistory.⁹⁷ Guðbergsson concludes that in terms of soil productivity, land becomes more productive agriculturally only after anthropogenic changes to the landscape are made.⁹⁸ These studies should dispel the notion of a pristine, harmonious ecology of pre-settlement Iceland; as with any landscape, the Icelandic environment has continuously undergone alterations.

2.3.3 *Exceeding Carrying Capacity*

Studies examining the carrying capacity of the land allow us to assess the hypothesis that farmers in the settlement period over-exploited the landscape.⁹⁹ "It seems that most estimates of Iceland's carrying capacity are based on what we know about the actual population of the country [which until the 20th century never exceeded 50,000 people] and then assuming in a thoroughly Malthusian way that this number was close to the maximum that could be supported."¹⁰⁰ Kristinsson argues that the estimates for carrying capacity should take into account the physical properties of the landscape and the traditional farming methods used to make that landscape productive.¹⁰¹ He concludes that the reason Iceland's population peaked at 50,000 was not that the carrying capacity of the land had been reached, as the land can actually easily accommodate 375,000 cows and 1.5 million tons of hay per year. These figures have never been reached in Iceland, leading us to conclude that medieval farmers did not exceed the carrying capacity by over-exploiting the landscape. Kristinsson argues that it was a labor scarcity rather than land scarcity that constrained medieval farming, suggesting that degradation models need to be reexamined.¹⁰² Likewise, it has been argued that economic ambition outweighed conservationist concerns, as intensive farming gradually destroyed the vegetation cover and forests throughout the settlement period. Pollen analysis demonstrates a decline in birch trees;

95 Ibid., 166; Zutter (1991).

96 Guðbergsson (1975, 1996).

97 Ibid., 41.

98 Ibid., 31–32.

99 Butzer (1990); Fletcher (1995); Netting (1982, 1990, 1993); Stone and Downum (1999).

100 Kristinsson (2000, 271).

101 Ibid.; Sigurbjörnsson (2000).

102 Kristinsson (2000, 276–278).

however, Hallsdóttir suggests that this decrease was only true for the first hundred years of settlement, and that by the 10th century, birch rates stabilize.¹⁰³ These data indicate conservationist efforts and an awareness that if forests continued to be destroyed at the rate exhibited during the initial settlement of the island, there would be no forests left.¹⁰⁴ Historical documents from the 12th to 18th century describe forest coverage that roughly corresponds to the forest coverage seen today.¹⁰⁵ For example, according to medieval texts, the churches in southern Iceland “used three forests as a wood resource in the Middle Ages... all of which are in existence to this day... Had there been considerable forests in the immediate vicinity there is no doubt that those powerful institutions would have secured rights to them.”¹⁰⁶ Forest clearing, therefore, appears to be an early phenomenon, “concentrated in time, and was not gradual.”¹⁰⁷

2.3.4 *Landnám Soil Erosion*

Dugmore and Buckland’s soil accumulation survey suggests that erosion in the highlands produced an increase in soil deposition in the lowlands.¹⁰⁸ As a result, they argue that both the highlands and the lowlands undergo a decline in land productivity. However, these studies¹⁰⁹ fail to consider two pivotal factors: first, that their region of study, Mývatn, may not be geologically characteristic of Iceland as a whole; and second, that degradation of the landscape in one area could possibly benefit and enhance productivity in neighboring areas, as the erosion of the highlands resulted in massive amounts of fertile soil trickling down into the lowlands.¹¹⁰

A number of well-preserved medieval longhouse sites have been discovered around Mývatn, making the area a logical choice for archaeological investigations.¹¹¹ These investigations aptly demonstrate a pattern of anthropogenic landscape alterations. Pollen analysis indicates that shortly after the beginning

¹⁰³ Hallsdóttir (1987).

¹⁰⁴ Ibid., 33–35.

¹⁰⁵ Júlísson (2000, 279–280).

¹⁰⁶ Ibid., 280.

¹⁰⁷ Ibid.

¹⁰⁸ Dugmore and Buckland (1991).

¹⁰⁹ Buckland and Dugmore (1991), Amorosi et al. (1997), McGovern (1990), McGovern et al. (1988), Simpson et al. (2002) and Smith (1995) are all archaeological-geomorphological-faunal studies carried out under the auspices of the North Atlantic Bicultural Organization (NABO) centered at Hunter College (McGovern 2004). NABO research has argued for a similar trajectory for the Norse colony in Greenland (McGovern 1994, 2000).

¹¹⁰ These trends are not Iceland-specific; for comparison, see Joyce and Mueller (1997) who have suggested a similar scenario for the social development of prehistoric Oaxaca.

¹¹¹ Friðriksson et al. (2004); Lucas (2009).

of the Landnám or Settlement period (ca. end of the 9th century A.D.), a decline in birch and willow trees is evident. By about 1000 A.D., highland areas witness soil attrition, while lowland areas begin to rapidly accumulate soil. By 1300, lowland areas are thought to be suffering from erosion as well, exposing unproductive Vitrisols.¹¹² Around this time, sites begin to exhibit a steady decrease in cattle and sheep faunal assemblages, suggesting that farms are unable to rear as many livestock as they once could at the beginning of the Settlement period.¹¹³ Today, many of these Mývatn medieval farmsteads are located in highly denuded areas (see Figure 3), prompting researchers to suggest that a mismanagement of agro-pastoral practices, perhaps coupled with an increasingly colder climate, acted as the executions of modern land degradation. It is not the intent of my research to suggest that areas of northeastern Iceland have not been the target of devastating erosional regimes;¹¹⁴ however, I question whether it is appropriate to apply this sequence of events to explanations of social change and the loss of political autonomy by 1262. Can the events that unfolded in Mývatn be used as a microcosm for the trajectory of farms throughout Iceland and the eventual instigator of social pandemonium? To address this question, we must further explore the geological setting of Mývatn, and examine how this setting compares with other areas in Iceland.

Iceland is thought to be a geological hot spot on the North Atlantic Ridge, suggesting that the island is sitting on a stationary hot mantle plume. Through continual tectonic activity, Iceland's location over this mantle plume has shifted eastward, creating a series of fracture zones that have now diverted northeastwardly and southwestwardly.¹¹⁵ Therefore, it has been thought that seven million years ago Snæfellsnes was situated directly over the mantle plume; over the last two million years the island has rotated such that currently Mývatn is believed to be near the center of the mantle plume (see Figure 4). The close proximity to the center of the mantle plume situates Mývatn along an axial rift zone, with active volcanism and frequent earthquakes.¹¹⁶ Arguably, a significant portion of the erosional patterns identified in Mývatn stem not solely from farming practices, but also from rifting events. Throughout human occupation, Mývatn has occupied a position in the volcanic system distinctive from many other regions, suggesting that the geological history of Mývatn precludes its use as an indicator of island-wide developments.

112 Dugmore and Buckland (1991, 499–502).

113 McGovern (1990); McGovern et al. (1988).

114 Arnalds (2000); Arnalds et al. (1987).

115 Guðmundsson and Kjartansson (1984, 31).

116 Ibid., 28–34.

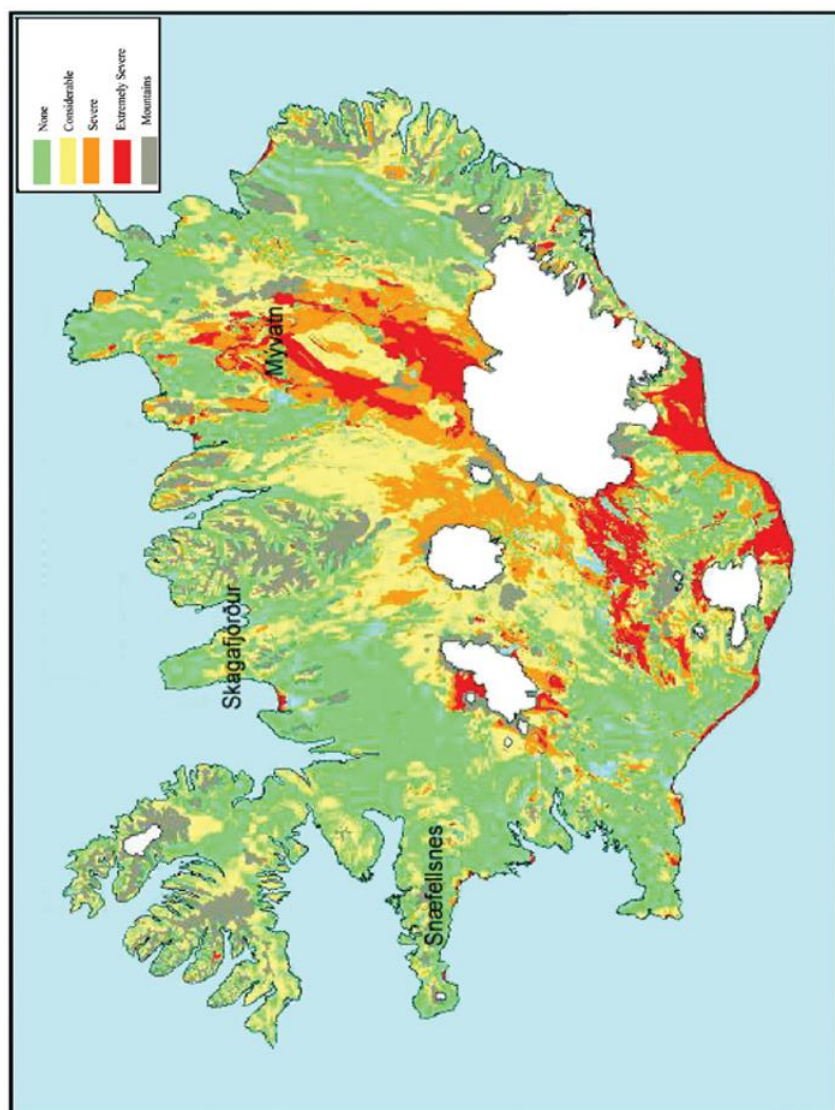


FIGURE 3 Map showing the extent of soil erosion in modern Iceland (AFTER ARNALDS 2004)

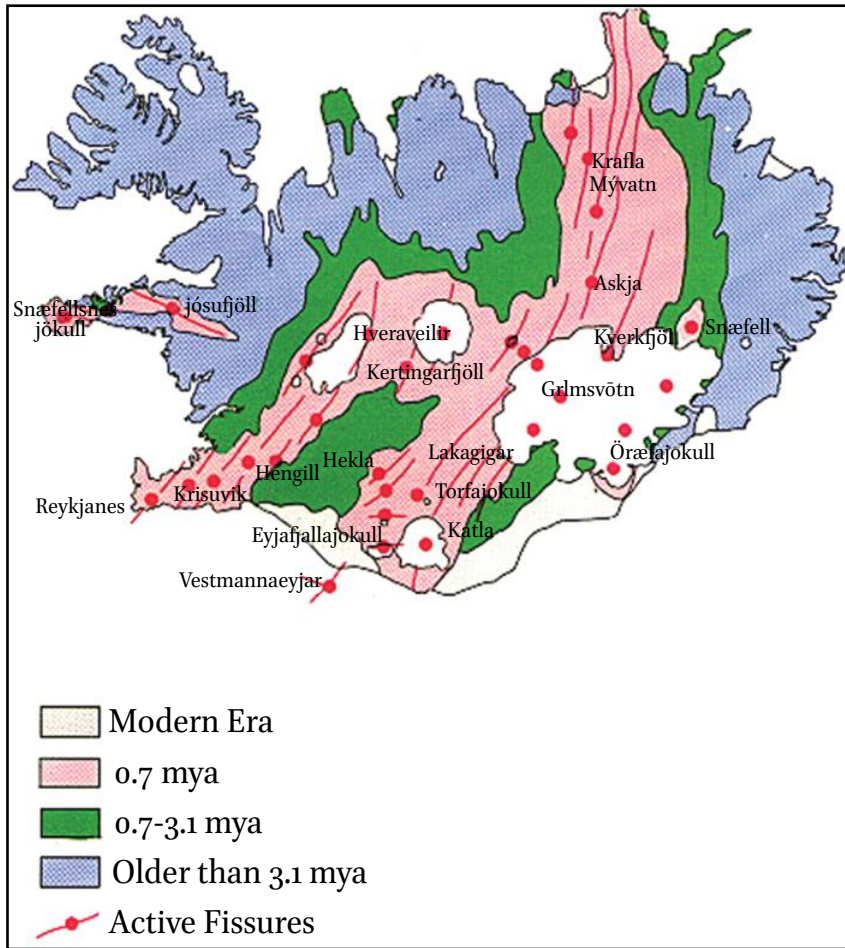


FIGURE 4 Iceland's volcanic rift system

Another consideration for using evidence from Mývatn as a proxy for island-wide agricultural development is its parent soil classification (see Figure 5). The parent soils of Mývatn have been identified as Vitrisols and Leptosols, or Vitrisol-Leptosol (SW-L) complexes.¹¹⁷ SW-L complex soils consist primarily of volcanic glass, with little to no organic content. SW-L complex Andosols thus have a low soil-organic carbon (SOC) content, rendering them virtually unsuitable for agriculture.¹¹⁸ However, these soils can be made amenable for agriculture with the

¹¹⁷ Arnalds (2004, 7).

¹¹⁸ Óskarsson (2004, 226, 228–230).

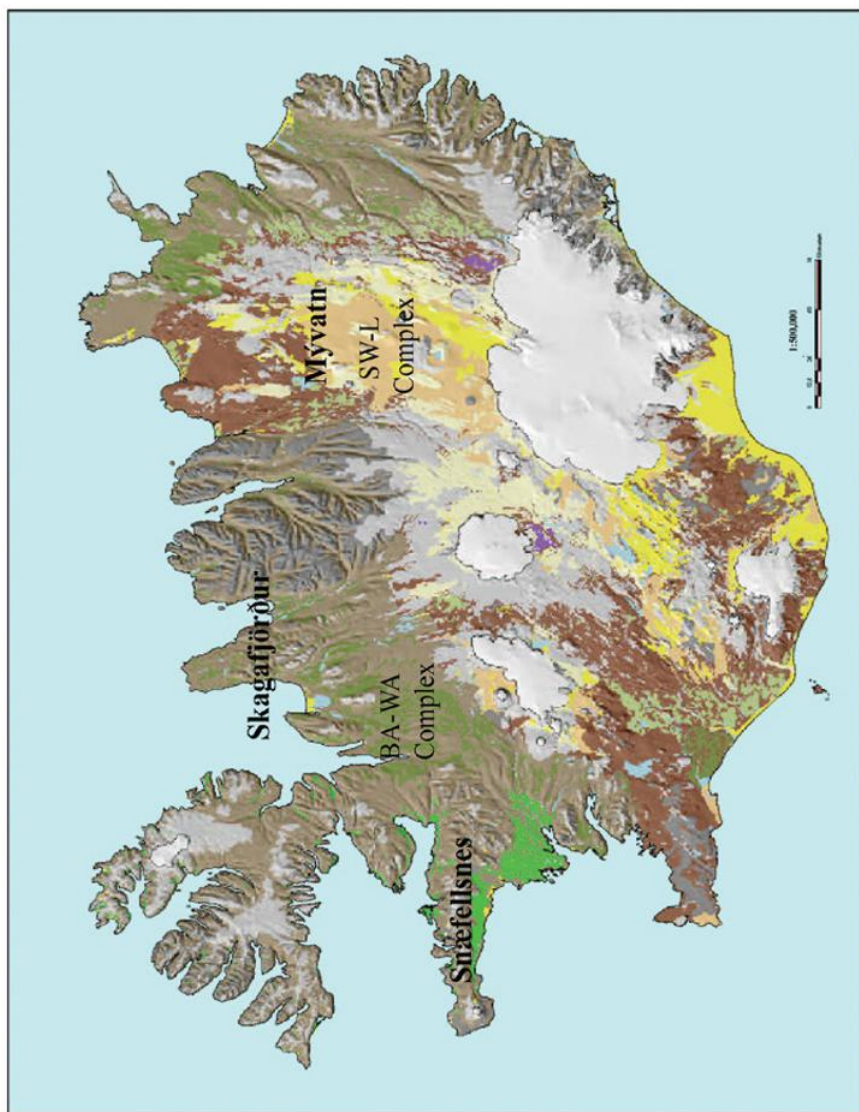


FIGURE 5 Map showing the soil type complexes found in modern Iceland (AFTER ARNALDS 2004)

introduction of organic material. Organic-rich aeolian soil from highland areas transformed SW-L soils typical of lowland Mývatn sites into Brown Andosols, with a high SOC content, creating potentially productive agricultural fields; however, as Buckland and Dugmore rightly point out, these Brown Andosols have a low density, making them friable and prone to erosion.¹¹⁹

We must, however, once again address the issue of Mývatn's divergence from the rest of the island. Of particular interest is a comparison of the soils of Mývatn with those of Snæfellsnes and Skagafjörður, the two wealthiest and most powerful regions at the end of the medieval period. Unlike Mývatn, the parent soils of both Snæfellsnes and Skagafjörður are Histosols and Histic Andosols, soils high in SOC and consistent with wetland areas (see Figure 5). The addition of topsoil from highland areas created Brown and Gleyic Andosols (BA-WA complexes). Like the Brown Andosols found in Mývatn, BA-WA complexes are high in SOC, but unlike Brown Andosols, BA-WA soils have a high density, making them more resilient to erosion.

2.4 Land Productivity in Skagafjörður

The degradation of the highlands in Mývatn may have agitated erosion in the lowlands, but for Snæfellsnes and Skagafjörður, the transport of highland topsoil stimulated the productivity of lowland soils by maintaining a high SOC content and in some areas facilitating better drainage. These anthropogenic soils are potentially more agriculturally productive than they had been prior to Norse settlement. To support this argument, however, one would need to demonstrate two things: first, as the highlands are subjected to erosion and a loss of soil, the lowlands witness an increase in soil deposition; and second, that an increase in soil deposition can be correlated to an increase in soil productivity¹²⁰ and the potential for larger grass yields. The remainder of this chapter will attempt to address these issues by introducing geomorphological data from five lowland farms in Skagafjörður: the sites Geitagerði, Glaumbær, and Reynistaður in the Langholt area; Hof in Hjaltadalur; and Steinsstaðir in Tungusveit (see Figure 6). These five farms have been selected for analysis here as they represent a range of farm sizes: Reynistaður and Hof are large chieftain farms; Glaumbær and Steinsstaðir can be ranked as medium-sized, wealthy farms; and Geitagerði is representative of later, smaller farms. Additionally, these farms were selected because they cover a fairly sizable and diverse area of Skagafjörður. Soil deposition was examined by measuring the amount of soil

119 Buckland and Dugmore (1991, 500).

120 Cf. Smith (1995).

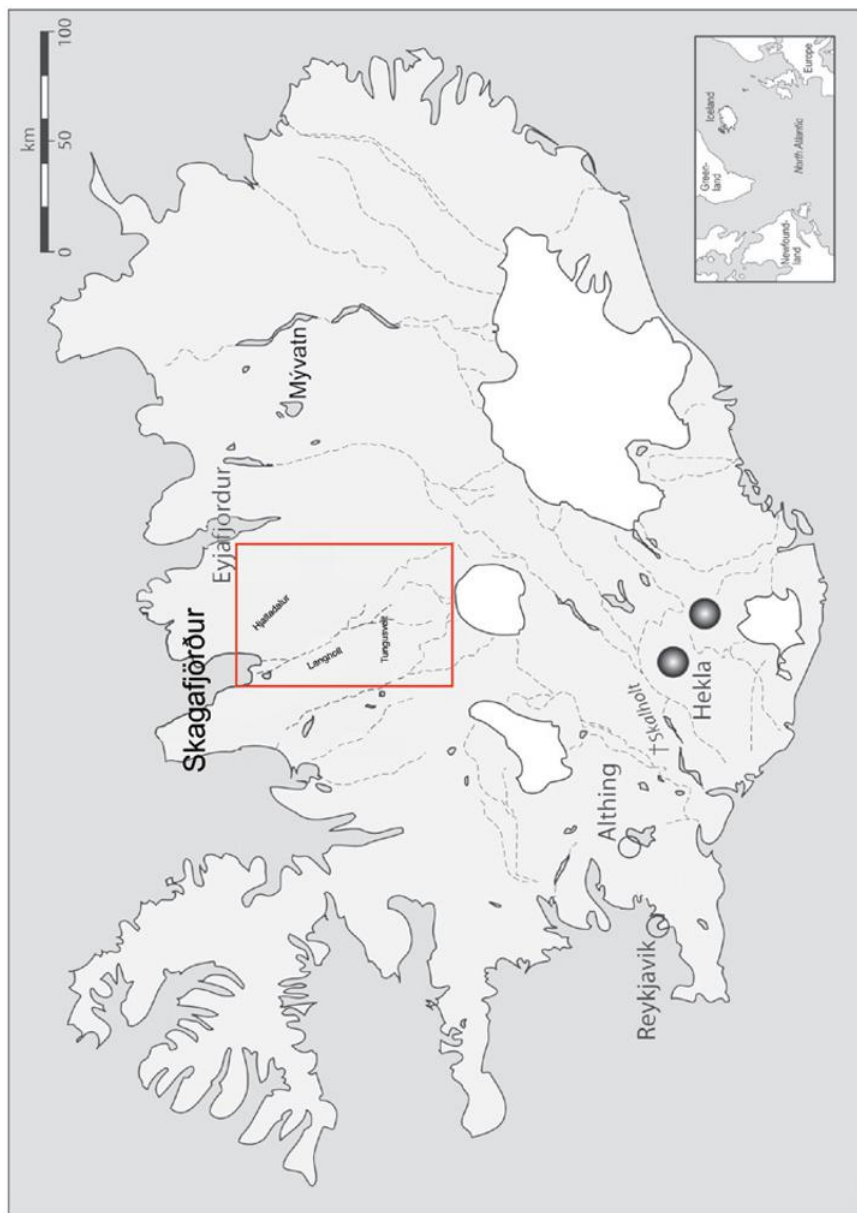


FIGURE 6 Map showing the research areas

deposited between tephra layers, and soil productivity was assessed through texture analysis that should enable us to assign samples to a specific Andosol types and therefore its potential productivity.^{121, 122}

2.4.1 *Measuring Soil Deposition through Tephrochronology*

Measuring the rate of the soil deposition in Skagafjörður has become relatively straightforward with Sigurður Þórarinnsson and Guðrún Larsen's development of tephrochronological frameworks.^{123, 124} Tephrochronology is based on the radiocarbon dating of volcanic ash (tephra) layers that were deposited on the surface following an eruption. In Skagafjörður we are primarily concerned with tephra from the volcano Hekla that produces rhyolitic ash eruptions. The relevant tephra layers found in Skagafjörður are:

1104 A.D.: Often referred to as Hekla 1 (H₁), identified as a light gray-yellow-white tephra layer. The thickness of this layer varies, but in Skagafjörður it averages to between 0.5 to 1 cm.

2900 BP: Referred to as Hekla 3 (H₃). It is characterized by a yellow-orange band on top of a white-green band below, and is often mixed with organic material. The average thickness is 4 to 6 cm.

4500 BP: Often referred to as Hekla 4 (H₄). It is a dark yellow-orange in color, and is often mixed with dark organic material. The average thickness is 2 to 3 cm.

These tephra layers, along with the topsoil horizon, can be used as a temporal marker; as we know the date of each tephra layer and the deposition of soil between tephra layers, we can measure the amount of soil in between strata in order to calculate the deposition rate per year (cm/yr). From these horizons I have distinguished four time periods: Modern, Historic, Settlement, and Prehistoric.¹²⁵ The horizon correlating to the Modern period is the topsoil

121 The raw data for this analysis are taken from research conducted for my MA (Carter 2003). Soil organic content (SOC) was not considered in my MA work, so I offer a new interpretation of these data here.

122 Brown (1997); Buol et al. (1980); Hunt (1972); Stein and Farrand (2001).

123 See also Chapters 4 and 5 for a more detailed explanation of tephrochronology.

124 Larsen and Þórarinnsson (1978); Þórarinnsson (1980).

125 In Chapters 4–6 I will present regional settlement pattern data that use a finer-resolution timescale with different names for each of these categories. I have maintained two systems of timescales to differentiate between the two datasets and to allow cross-referencing with my earlier MA research.

horizon. Topsoil is easily classified in a soil profile, and for northern Iceland represents the last two hundred years of soil accumulation (c.1800–2000 A.D.). The Historic period (1104–1800 A.D.) includes the soil between the end of the topsoil horizon to the top of H₁. The Settlement period (2900 BP [900 BC] to 1104 A.D.) consists of the soil between the H₁ and H₃ tephra layers and marks the onset of human occupation of Iceland. Lastly, the Prehistoric period (2900 BP to 4500 BP [2500 BC]) includes the soil between the H₃ and H₄ tephra layers and is representative of the soil composition before human populations settled in Iceland.

2.4.2 *Soil Deposition in Skagafjörður*

During the latter half of the 10th century A.D., rapid forces of erosion are thought to be underway in the highlands,¹²⁶ causing a subsequent downward movement of soil.¹²⁷ The first task in examining the productivity of lowland farms in Skagafjörður, therefore, is to determine whether there is evidence of highland erosion occurring simultaneously with an increase in soil deposition rates in the lowlands. If highland erosion is correlated with an increase in soil deposition in the lowlands, we would expect to see this increase during the Settlement period (c.874–1104 A.D.) and to continue into the Historic period (c.1104–1800 A.D.). Overall, the data indicate a significant increase in soil deposition in the Settlement period for all five farms surveyed (see Figure 7). The data collected indicate that during the Prehistoric period (4500 BP [2500 BC] to 2900 BP [900 BC]) the average rate of soil deposition was 0.007 cm per year, over 1600 years (see Table 3). For the Settlement period, the average deposition rate was 0.018cm per year, over 2004 years (see Table 4). These data indicate that soil deposition on average more than doubled in the lowlands during the onset of highland erosion. Soil deposition patterns at Glaumbær, Geitagerði, Hof, and Steinsstaðir, for which we have data from both the Prehistoric and Settlement periods, all indicate a dramatic increase in soil aggregation. An increasing soil deposition trend continues into the Historic period, with an average rate of 0.019cm per year, over 696 years (see Table 5). These farms document nearly the same rate of deposition in the Historic period as they had in the Settlement period, but in half the amount of time. In the Modern period (1800–2000 A.D.), the deposition rates appear to be even higher, with an average deposition rate of 0.072cm per year, over only 200 years (see Table 6). While the initial increase in deposition during the Settlement period can best be

126 There are several low-relief mountain chains that run throughout Skagafjörður; it is typical to find sites located at the foothills of these ranges. Highland sites are defined as those located above 250 m above sea level. For Iceland, this is actually quite high. Few sites are located above 350 m above sea level (see Chapter 6).

127 Dugmore and Buckland (1991, 154–157).

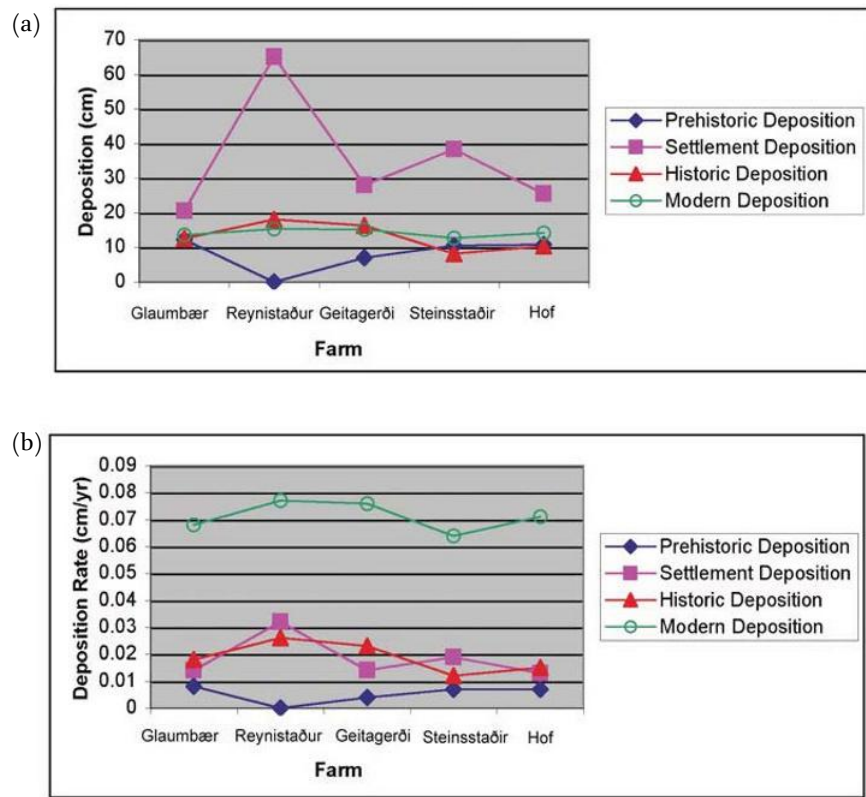


FIGURE 7 Overall (a) deposition and (b) deposition rates by farm across time

attributed to the erosion patterns found in the highlands, the same may not be true for the Historic and Modern periods. The soil compositions for the Historic and Modern periods are, as we will see when the texture data are discussed, consistent with local rather than external topsoil germination. For the Settlement period the soil is characterized by a high percentage of aeolian (i.e., windborne) silt, making these horizons secondary depositions. While highland soils can be classified as Brown Andosols with a high silt fraction, lowland soils, prior to human settlement, are identified as Histosols and Histic Andosols (H-HA) with a moderate silt fraction and a high sand and clay fraction. We can therefore posit that this windborne sediment was transported from outside areas, likely the highlands. Deposition rates decrease somewhat in comparison to the Settlement period, perhaps indicating a decrease in the rate of erosion in the highlands, through either conservationist efforts or complete degradation; either way, the amount of soil transport from the highlands is beginning to wane.

TABLE 3 *Average rate of (a) soil deposition and (b) texture percentages in the Prehistoric period*

(a)

Farm	Deposition (cm)	Rate of deposition (cm/yr)
Glaumbær	12.2	0.008
Reynistaður	NA	NA
Geitagerði (Langholt)	7	0.004
Steinsstaðir	10.5	0.007
Hof	10.8	0.007

(b)

Farm	Texture averages			Variation in Sand %	Variation in Silt %	Variation in Clay %
	Sand	Silt	Clay			
Glaumbær	53.8	34.5	12	42	26	16
Reynistaður	NA	NA	NA	NA	NA	NA
Geitagerði (Langholt)	56.4	34.6	9.1	40	36	20
Steinsstaðir	51.8	38.3	10	13	14	7
Hof	59	31.2	10.9	37	28	29

TABLE 4 *Average rate of (a) soil deposition and (b) texture percentages in the Settlement period*

(a)

Farm	Deposition (cm)	Rate of deposition (cm/yr)
Glaumbær	20.6	0.014
Reynistaður	65.0+	0.032+
Geitagerði (Langholt)	28	0.014
Steinsstaðir	38.4	0.019
Hof	25.5	0.013

(b)

Farm	Texture averages			Variation in Sand %	Variation in Silt %	Variation in Clay %
	Sand	Silt	Clay			
Glaumbær	44.3	46.5	9.2	59	56	19
Reynistaður	46.7	37.3	15.8	53	33	27
Geitagerði (Langholt)	47.3	41.9	11.1	54	40	18
Steinsstaðir	44.5	49	7.4	50	50	12
Hof	55.6	34.2	10.3	20	24	20

TABLE 5 *Average rate of (a) soil deposition and (b) texture percentages in the Historic period*
(a)

Farm	Deposition (cm)	Rate of deposition (cm/yr)
Glaumbær	12.5	0.018
Reynistaður	18.1	0.026
Geitagerði (Langholt)	16.3	0.023
Steinsstaðir	8.1	0.012
Hof	10.3	0.015

(b)

Farm	Texture averages			Variation in Sand %	Variation in Silt %	Variation in Clay %
	Sand	Silt	Clay			
Glaumbær	53.4	35.7	8.4	52	39	19
Reynistaður	50.8	36.2	12.7	45	20	20
Geitagerði (Langholt)	44.9	45.7	9.5	40	47	21
Steinsstaðir	43.5	47.1	10.1	45	40	17
Hof	62.2	29.2	8.5	23	30	7

TABLE 6 *Average rate of (a) soil deposition and (b) texture percentages in the Modern period*
(a)

Farm	Deposition (cm)	Rate of deposition (cm/yr)
Glaumbær	13.5	0.068
Reynistaður	15.3	0.077
Geitagerði	15.2	0.076
Steinsstaðir	12.7	0.064
Hof	14.2	0.071

(b)

Farm	Texture averages			Variation in Sand %	Variation in Silt %	Variation in Clay %
	Sand	Silt	Clay			
Glaumbær	68.9	27	4.1	40	30	14
Reynistaður	64.5	29	6.5	24	10	14
Geitagerði	58.8	33.5	7.6	53	43	23
Steinsstaðir	54	40.1	5.9	24	23	7
Hof	73.6	19.8	6.7	38	26	17

2.4.3 *Soil Organic Content in Skagafjörður*

Soil depositions rates are clearly accelerated during the Settlement period, but does that increase in soil deposition indicate an increase or decrease in overall soil productivity? Specifically, could topsoil derived from an exotic source retain any of its organic carbon content, or would it in transport be more likely to lose all vegetative content and become predominately a silt deposit? Amorosi et al.,¹²⁸ Dugmore and Buckland,¹²⁹ McGovern,¹³⁰ and Smith¹³¹ posit that the movement of topsoil down slope from the highlands to the lowlands

¹²⁸ Amorosi et al. (1997).

¹²⁹ Dugmore and Buckland (1991).

¹³⁰ McGovern (1990).

¹³¹ Smith (1995).

would result in the deposition of a silt lens with little to no organic content. A similar study in southwestern Niger, however, documented that aeolian materials of considerable deposition – 0.5 m or more over a relatively rapid period of time – “contained thirty-two times more organic carbon relative to the local topsoil...[suggesting] that wind-eroded organic matter has the potential of being transferred over great distances and deposited far away from its source.”¹³² As we saw in the previous section, all of the lowland farms sampled in this survey more than doubled in their amount of soil during the Settlement period, suggesting that deposition was both significant and rapid, and therefore potentially retained a high organic carbon content. Likewise, the farms examined show a dramatic increase in silt beginning in the Settlement period (see Figure 8); however, the silt fraction remains fairly constant thereafter and, as will be addressed below, is characteristic of Brown and Gleyic Andosols.

If land productivity changes once erosion begins in the highlands, we would expect the soil texture of the Prehistoric period to be distinct from that of the Settlement period. The soil texture of the Prehistoric period is characterized by a high sand fraction, with a moderate to low silt fraction (see Table 3). Sand ranges between 78 and 33 per cent across Skagafjörður, while silt ranges between 60 and 19 per cent, with an average range between 30 and 40 per cent. The clay component of prehistoric soils also has a wide variation, with a fluctuating range between 29 and less than 1 per cent. The texture compositions found in the prehistoric soils of Skagafjörður are consistent with those found in a bog horizon. The physical properties of Skagafjörður's prehistoric soil can be classified as Histosol-Histosol Andic (H-HA) soil or bog soil, with a high ratio of peat to dark brown or black humic soil. H-HA bog soils, while

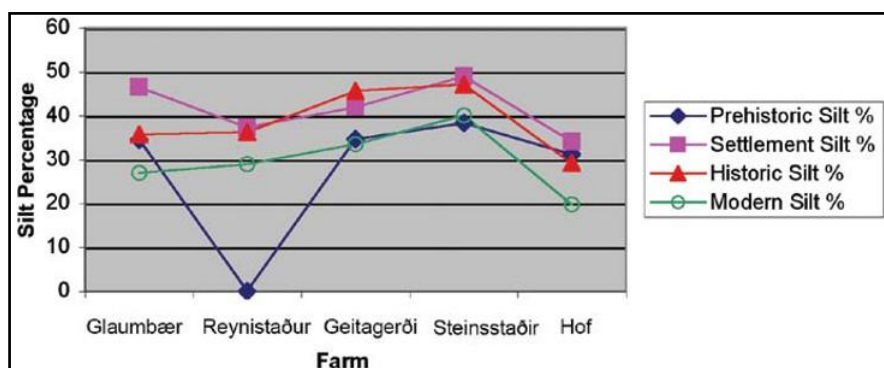


FIGURE 8 Average silt percentage by farm across time

132 Sterk et al. (1996) cited in Arnalds (2004, 231).

maintaining a high nutrient-holding capacity, also have a high water-retention rate that allows for little to no drainage. The high organic component is represented by the high sand fraction, while poor drainage is represented by the lower silt and fluctuating clay fractions.¹³³

Soils from the Settlement period in Skagafjörður have a different texture composition than those from the Prehistoric period (see Table 4). The Settlement period is characterized by a higher silt fraction, ranging from 17 to 77 per cent, with an average range between 40 and 50 per cent. The sand fraction decreases slightly with an average range between 50 and 60 per cent. The clay fraction stabilizes somewhat, although still has a wide average range between 6 and 20 per cent. The physical properties of the soil from the Settlement period are distinct from those of the Prehistoric: while there is variation between the farms examined, overall the soil can be classified as having a lower organic component, and is red to gray-brown in color, enabling one to identify these soils as Brown and Gleyic Andosols (BA-WA). Most of the farms surveyed here illustrate these classic characteristics of BA-WA complexes.

The overall texture data suggest that increased soil deposition during the Settlement period is correlated to an increase in silt fraction (transformation of H-HA soils to BA-WA complexes) with an increase in the drainage ability of the soil. Smith¹³⁴ has suggested that an increase in silt deposition can cause increased waterlogging. This can occur in areas where soil deposition raises the level of the water table, creating pockets of blanket bogs. This phenomenon is readily seen in Skagafjörður today, and likely began in earnest in the 16th century. However, the creation of blanket bogs can only occur in areas that are dry to begin with; that is, existing bogs do not become blanket bogs. Overall, the data here suggest that lowlands became drier, not wetter, in the medieval period.

Drainage by itself can “increase the yield of marshy areas considerably by replacing peat and sedges with grasses, giving a better yield and quality of fodder...thus the output of fodder may be augmented by improving the productivity of the vegetated areas.”¹³⁵ However, such increased drainage creates predominately silty loams that are “friable and erode easily, and their water-holding capacity and fertility can [therefore] become low.”¹³⁶ Erosion does not seem to be an issue, however, with many of the farms surveyed in Skagafjörður. During the Settlement period farms like Glaumbær and Reynistaður had

133 See also Wada et al. (1997).

134 Smith (1995).

135 Friðrikksson (1972, 795).

136 Thorsteinsson et al. (1970, 87).

gray-brown Gleyic soils with an average clay fraction between 10 and 15 per cent, suggesting that these soils had a reasonable water- and nutrient-holding capacity for grass growth. The incremental increase in soil deposition at Glaumbær and Reynistaður also indicates that erosion was not challenging the potential productivity of these farms during the late Settlement and Historic periods. These data suggest that, overall, lowland farms in Skagafjörður became more productive in the late Settlement and Historic periods than they had been in the Prehistoric period. Erosion in the highlands initiated better drainage in the lowlands, stimulating soil and grass growth. A decline in land productivity cannot be demonstrated for the lowlands. The data suggest that following the erosion of the highlands, land in the lowlands become more productive, permitting farmers to increase their number of sheep folds. However, the tax records¹³⁷ indicate that some farms fared better than others in the lowlands. In terms of wealth assessed by the tax records, Reynistaður is the wealthiest, followed by Hof, Glaumbær, Steinsstaðir, and lastly Geitagerði (see Figure 9). The data presented here suggest that regionally land productivity increased in Skagafjörður; what remains to be examined is whether or not productivity is related to the wealth of individual farms. To assess whether there is a correlation between potential land productivity and actual wealth of a farm, a survey of land use is needed. I carried out a survey of this kind in Hjaltadalur, the valley where Hof is located. The results of this survey are discussed in chapters 5 and 6, but it is important to mention here that none of the farms surveyed indicate a decrease in agricultural productivity; rather, all show an increase in economic production after 1000 A.D.

2.5 Discussion

The ecology of Iceland before human occupation is characterized by dense brush and dwarf birch forests, with shallow but fertile grass-covered soil in the highlands and heavily birch-forested areas intersected with boggy wetlands in the lowlands. During the Prehistoric period, soil deposition rates in Skagafjörður were subtle in the lowland areas, measuring only 0.007 cm per year. The highlands, too, had shallow soil deposition rates throughout the Prehistoric period, as soil profiles document only a thin horizon of soil above a larger bedrock horizon.¹³⁸ When Norse settlers arrived in Iceland during the latter half of the

137 For a discussion on tax value, please see Chapter 4; and for a discussion on tax and farm productivity please see Chapters 5 and 6.

138 Byock (2001, 58–59).

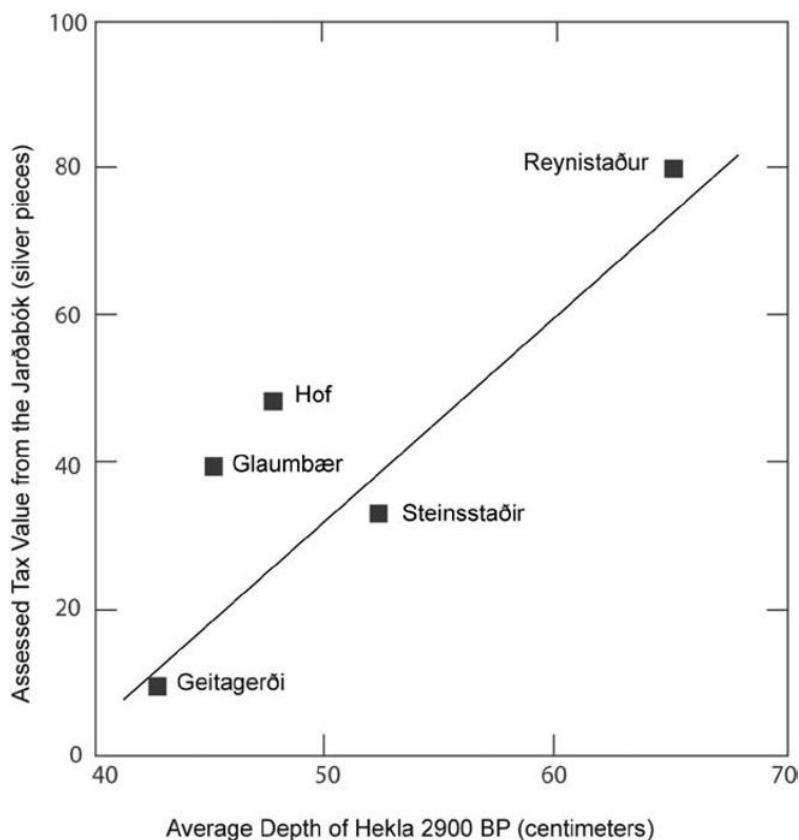


FIGURE 9 *The relative position of the five farms with respect to the average depth of Hekla 2900 and the tax value from the Jarðabók*

9th century A.D., the highlands, with their existing meadows and woodland areas, were perhaps a more attractive settlement option than the lowlands. Archaeological data¹³⁹ suggest that the highlands were settled earlier than some of the lowland areas, perhaps due to the ecological differences between the two regions.¹⁴⁰ As land claims intensified and greater numbers of cattle and sheep were introduced, the need arose for additional grass pasture, which was alleviated by burning forests in both the highlands and the lowlands. The shallow soils of the highlands, now stripped of dense brush and forest vegetation, began to erode away. Overgrazing in the newly created grass and

139 I will challenge this assumption in Chapters 5 and 6.

140 Sveinbjarnardóttir (1992, 4–6).

heath meadows exacerbated the forces of erosion, and by the 12th century A.D. the highlands were heavily denuded.

The data presented here support the argument that for Skagafjörður, while the highlands may experience a decline in productivity, the lowlands experience an increase in agricultural potential. Deposition rates increased dramatically at every farm surveyed, with an average deposition rate of 0.018cm per year, once erosion in the highlands begins. I have argued that increased productivity resulted from the transformation of Histosol-Histic Andosols to Brown-Gleyic Andosols that maintained a high SOC content while simultaneously promoting better drainage in the wetlands through an increase in silt fraction. Overall, every farm examined in Skagafjörður sees an increase in potential soil productivity throughout the Historic period.

We have seen that soil deposition is correlated with tax value, and that tax value is correlated with potential agricultural productivity, illustrating that there is tremendous variation between farms in Skagafjörður. In the Prehistoric period, there is almost no variation between farms. Beginning at the end of the Settlement period (c.1050–1104), however, a shift occurs. Farms like Glaumbær and Reynistaður become markedly different from farms like Geitagerði. The precise relationship between each farm and differences in texture composition cannot yet be established, but is perhaps indicative of different agricultural practices. The data can, however, clearly suggest that potential productivity and land value are highly related. In fact, the emergence of small farms in the 12th century may reflect the development of specialized farms (see chapters 5 and 6). The geomorphological data presented here argue that the destruction of the highlands leads to an increase in the potential agricultural productivity of the lowlands. The historical records presented here indicate that lowland farmers seized this opportunity. In short: geography matters.¹⁴¹

The data demonstrated here argue that, as in the Hawaiian case study, the ecology of Iceland was stable enough to ensure surplus production. The labor required to generate surplus production in turn could be managed by systems of land tenure, attaching small tenant farmsteads to larger farmsteads. These conditions certainly could prime Iceland for social change and the development of greater social complexity, but as with Hawaii, we are left to question what the elites were doing with all these surpluses. Should we ignore the fact that Iceland never lost its contacts with the Scandinavian kingdoms, but rather maintained both social and economic ties to the Norse homeland?

141 Krugman (1995).

2.6 Conclusions on Iceland as an Autonomous Secondary State

An examination of degradation models demonstrates that the relationship between nature and culture is complex and must be understood as a dialogue, with both sides contributing to overall appearance of the physical and cultural landscapes. Anthropogenic degradation has been presented as the driving factor in the collapse of chiefdoms in Iceland. As with climate change models, a decrease in land productivity and ensuing land scarcity have been seen as driving the precarious, marginal medieval Icelandic landscape into a state of crisis. Resource scarcity, it has been argued, galvanized into violent tensions among elites, and between elites and commoners. As seen in evolutionary models of primary state development, these social crises were solved with the innovation of a single centralized political figure. However, the precise extent of degradation and resource scarcity has been brought into question through investigations on soil accumulation rates, pollen distribution analysis, and a reexamination of carrying capacity levels. These studies suggest that Iceland did not overstep a critical threshold of resource availability, demonstrating that the tensions observed in the 12th and 13th centuries may have little to do with environmentally-driven shortages.

Previous environmental reconstructions have suggested that the destruction of the highlands, coupled with the onset of the Little Ice Age, is correlated to an overall decrease in productivity for the entire island; however, a decline in *total* productivity does not imply an *equal* decline in productivity throughout Iceland. There can be little doubt that a decline in potential grass yields in the highland areas was not only possible, but was in fact a reality; however, a decrease in land productivity has not been adequately demonstrated for lowland areas. Further, a decrease in land productivity for the highlands does not adequately explain why these alterations precipitated a reorganization of the social structure of medieval Iceland by 1262 A.D. The data presented here have suggested that there is a correlation between the loss of soil in the highlands and a shift in the balance of power in medieval Iceland; however, erosion in the highlands did not instigate social change, nor did it destroy the ecology of the lowlands. On the other hand, Anthropogenic erosion in the highlands did initiate a series of geomorphic changes in the lowlands that resulted in the rising agricultural potential of former wetland areas.

The increase in agricultural potential allowed lowland farmers the ability to intensify grass production. With more grass came the capability of rearing more livestock, and thus the ability to produce a greater quantity of secondary products, such as wool, the currency of wealth in medieval Iceland. The ability to intensify grass production promoted additional labor investments in the

land, thereby increasing its value. An increase in land value is evidenced by a strengthening of property regulations and mounting tensions in the social relationship between independent landowners and chieftains. During the Settlement period, farmsteads were maintained through numerous, independent, households. In Skagafjörður before the erosion of the highlands, little could be done to increase the productivity of the land in the lowlands. It was, therefore, impossible to intensify household production, since production centered on livestock, and “the amount of grass, especially grass that one could save as hay to bring livestock through the winters, put an absolute limit on the number of stock a household could maintain.”¹⁴² Initially, the only means of increasing the number of livestock was to work more land, which would have meant recruiting more labor from outside one’s household; there was no incentive for working someone else’s land when one could farm one’s own, even if that meant simply sharing rights to land use with other households. The inability to recruit outside labor encouraged slave labor as a viable alternative; however, the costs in additional consumption to the household created by slave laborers limited the designs for power of even the most ambitious chieftain or independent farmer.

Agricultural productivity in Skagafjörður, however, increased once topsoil from the highlands was deposited onto the lowlands, by increasing the fertility of the existing soil and by promoting better drainage. Production in Iceland could now be increased, but it could only do so through a reorganization of the social structure. Durrenberger has suggested that in non-state societies, “changes in political and social organization bring with them increases in productivity...household units may well bear the costs of taxes and administration in return for more favorable production situations.”¹⁴³ For Iceland, the cost to household units was labor, as seasonal hired laborers replaced slave labor. Chieftains and wealthy independent farmers provided a small landholder with protection and an ensured right to landed property from the devouring ambitions of rival farms and *storgoðar*. In return, a small landholder provided goods and labor services to their protector. However, medieval Iceland lacked institutional structures to translate these social arrangements into practice – although laws were written to ensure the system, there were no means of enforcing these laws. Without an institutional structure, Icelanders depended on force and the blood feud to ensure their rights to land. Violence placed a heavy strain on the chiefly system, and by the 13th century, a civil war between two economically and politically dominant families of Iceland ensued. In the end,

142 Durrenberger (1988, 250).

143 Ibid., 244.

structural change came in the form of replacing chiefs with one centralized political figure supported by a system of regional sheriffs (see also Chapter 1), legitimized by Norwegian support. The Norwegian Crown could provide something chieftains could not: a state institutional structure that could both make *and* enforce laws. The shift from chieftdom to state is perhaps an unintended consequence of the decisions made by farmers seeking to increase their wealth by seizing the opportunity to increase their grass yields. The ability to increase production and not environmental duress, elicited an incentive for social change.

The data presented here demonstrate that surplus production was possible, but what remains to be examined, however, is how this surplus was used and what role, if any, it might have played in Iceland's path towards state complexity. As we saw with the Polynesian case studies at the start of this chapter, we are left to question whether contact with existing state societies, through both peaceful commerce and violent conquest, played a part in the development of secondary state institutions in Iceland. In the following chapter, I will consider a second model that is the antithesis of autonomous social complexity: hegemonic secondary state formation and the examination of Iceland as a possible planned and controlled Norwegian colony.

The Norwegian World System: Hegemonic Colonial Secondary State Formation

Iceland was decisively a Norse colony. The material culture as well as the documentary record all point to a Scandinavian homeland for the majority of the settlers; this much is agreed upon by all scholars of medieval Iceland, but here the consensus ends. Two topics have generated the most debate: the conditions under which Iceland was first colonized, followed closely by the reasons for and process behind the development of secondary state institutions. Archaeologists have tended to view Iceland as an independent colony that maintained only a minimal relationship with its Scandinavian homeland (see also Chapter 2). Once in Iceland, the settlers began creating a new, local society, at some point in the process forging a distinctively Icelandic identity¹ and a new sociopolitical system structured around state institutions. Literary historians, in contrast, are a divided group: some scholars echo the history told by archaeologists² while others argue that the documentary record, namely the sagas, are proof that Iceland was always a planned and controlled colony of the Norwegian crown.³ Historians from this latter 'dependent Iceland' camp argue that Iceland was but one colony in a larger Norse Empire, governed through a medieval prototype to the world-systems organization theorized by Immanuel Wallerstein.⁴ Under these parameters, Norway maintained a hegemonic hold over Iceland from the beginning, dictating its economy as well as its sociopolitical structure. The development of more pronounced state institutions in the 13th century is seen as the logical outcome of an imperial desire to consolidate holdings once the initial rush to populate the frontier had subsided. On the other hand, historians from the 'independent Iceland' camp frequently point out that the family sagas describe a society governed by chieftains, not a king, and that a loss of independence occurred in the mid-13th century as a consequence of a civil war between rivaling aristocratic families as documented in the contemporary Sturlunga sagas. 'Dependent Iceland' historians, however, respond by casting doubt on the historical accuracy of the family

1 Ólafsson (2000).

2 Byock (2001).

3 Hastrup (1992, 2004).

4 Wallerstein (1974).

sagas, written at least two hundred years after the events they describe; in their view, the sagas should be understood as myths demonstrating all the trademarks of what anthropologists have termed a ‘cultural cringe’ – a phenomenon whereby a dominated population can, through boastful storytelling, transform their own subjection and sense of inferiority into a type of collective power and motivation to overthrow their dominators.⁵ Accordingly, the civil war documented in the 13th-century Sturlunga saga should be interpreted as ongoing contestation of local power between aristocrats who rely, as they always had, on their Norwegian king for arbitration.

Debates of this nature can be difficult to resolve without acknowledging that the point of contention lies less with vying interpretations of an agreed-upon dataset than with the acceptability of the dataset itself: are the texts, and the sagas in particular, viable sources of information on early Icelandic society? If they are removed from historical consideration, it will be difficult to either support or refute the proposition that Iceland existed solely as a peripheral territory to a Norwegian Empire. For archeologists, the removal of these texts has further implications: the inferences drawn from the material record are framed by the ethnographic snapshots of early 19th-century Icelandic society, but by and large these images take clearer focus through the telling of the medieval sagas, a collection of no fewer than eighty metahistorical accounts of the settlement and development of early Icelandic society. The sagas represent the “most comprehensive extant portrayal of a Western medieval society,”⁶ and yet a growing number of scholars have raised concerns over the historicity of these texts, suggesting that at best they represent an older Germanic cultural tradition, but do not reflect the reality of early Icelandic society. At the core of these perceptions is a methodological dilemma: how can a researcher untangle fact from fiction in a body of texts that were written nearly a thousand years ago about a time period that is three to four hundred years older still?

A careful reading of these texts demonstrates a number of contradictions, especially between the family sagas, which describe the earliest phases of colonization (874–1050 A.D.), and the Sturlunga sagas, which describe the late 11th through 13th centuries. I will follow a different line of analysis, arguing that the so-called contradictions found in these texts reflect a society in transition and the rise of a growing aristocratic class alongside the development of a secondary state. Ultimately, this debate speaks to larger anthropological issues over how relationships between colonies located at the edges of a defined world system and more mature state societies are negotiated, and why under some

5 Anderson (1991); Hume (1993).

6 Byock (2001, 22).

circumstances these relationships transform frontiers into independent nations and under others create systems of imperialism. My objective here, then, is not to distinguish fact from fiction within the sagas, but to identify traces of social processes embedded in the text that can help us to untangle the conditions that prompted the development and influenced the nature of the Icelandic secondary state. To do so, I have chosen to examine legal descriptions of marriage and inheritance arrangements in these texts – topics typically serving as plot devices rather than appearing at the forefront of the saga. Nonetheless, embedded within the depictions of these banal events, broader patterns of social behavior are to be found. Once identified, these patterns when used alongside the archaeological record can serve as a valuable tool for understanding more extensive processes of state development in medieval Iceland.

The goal of this chapter is to propose a methodology for examining the sagas and exploring how to best integrate these texts with archaeological research.⁷ Once we acknowledge that the sagas can be used as a type of ethno-historical source, the arguments for hegemonic Norwegian control in the 9th through 12th centuries lose their force. Rather, the data presented here suggest that while Iceland remained an active player in a Scandinavian world, social change in the late twelfth–early 13th century must be viewed as a confluence of local and global politics. The sagas suggest a reorganization of the economy by the 12th century, a trend echoed in shifting social positions determined by gender and class. These changes, as I will argue in chapters 6 and 7, are the result of Europe-wide economic trends played out locally in Iceland by rival aristocratic families.

3.1 Out on the Frontier: Models of Secondary State Formation in Colonial Settings

Anthropological archaeologists have long advocated against studies of the past that examine only local-level cultural phenomena, divorced from broader social and spatial frames of reference. Armed with Wallerstein's world-systems model⁸ and a diachronic dataset, archaeologists have argued that the dynamics of core-periphery relationships existed well before the rise of capitalism, and that these relationships often spurred social complexity in peripheral areas; exactly how this spark of social complexity was ignited remains a topic

7 See also Carr (1991); Levy and Higham (2005).

8 Hopkins and Wallerstein (1982); Wallerstein (1974).

of infinite discussion.⁹ Wallerstein's original model was intended to examine social change at the hands of nineteenth- and twentieth-century imperialism, a system of empires headed by a centralized, elite-based polity or core, operating through the exploitation of subordinate polities or peripheries.¹⁰ While Wallerstein did not have pre-modern empires in mind when he formulated this model – in fact, he has stringently argued the historical specificity of his model as applying only to industrial capitalist societies – anthropologists like Ekholm and Friedman have argued that Wallerstein's conceptual framework of core and periphery interaction has broader applications that allow archaeologists to examine data at the intersection of economic and political lines.¹¹ Ekholm and Friedman have likewise suggested that core polities are inherently hegemonic and greedily gobble up their surrounding neighbors in order to fulfill the demands of a growing elite class. Early use of core-periphery models, however, tacitly imply that power in an empire is always derived from *the* core, inferring that empires are in a sense monolithic in their strategies of conquest and consolidation.¹² The peripheries, on the other hand, are often presented as hapless pawns totally subject to the whims of the core, with no control over the terms of their interaction with the commanding core polity. More recent researchers in both ethnography and archaeology have, however, called for caution when applying world-systems theory to pre-modern societies, suggesting that the notion of unidirectional power flows stemming entirely from the core as waves washing over a passive and inactive periphery is misguided.¹³ Taking cues from models focused on agency, gender, social practice, and identity, the axioms of 'core dominance' and 'asymmetric exchange systems' are being replaced with multiscalar models¹⁴ that examine these interactions as reciprocal relationships. Scholars have begun to question whether contact through economic relationships are necessarily defined as hegemonic and have begun to acknowledge that so-called peripheral societies do have ways of influencing the social dynamics of core societies.

Kohl has made the case that peripheral communities are more active and influential than the previous models suggested, arguing that these polities will control the right to continue or cease exchange with a core, depending on their

9 Chase-Dunn and Hall (1997); Peregrine (2000); Rowlands et al. (1987); Schortman and Urban (1992).

10 D'Altroy (1992, 15); Hastorf and D'Altroy (2001, 18–19); Rowlands et al. (1987, 4–5).

11 Ekholm and Friedman (1979, 45).

12 Ibid., 47–52.

13 Hall (2000); Kohl (1987); Stein (1999, 2002a, 2002b).

14 Lightfoot (1995); Lightfoot et al. (1998).

own localized needs. There may in fact be negative consequences for a peripheral polity that opts to discontinue trade with a core polity, but typically, suggests Kohl, a core polity will seek to renegotiate the terms of their exchange, rather than use force or threaten a periphery into submission.¹⁵ Under these revised, multi-directional models the relationship between a core and its periphery are constantly negotiated, but even so it is likely that “the core powers had by far the upper hand, because of their coercive capacities, but they were not the only players in the game.”¹⁶ Another major limitation of the core-periphery model is the assumption that there exists a single core with multiple peripheries, and that these two classifications are rigidly enforced. The historical reality of documented empires, however, paints a landscape with multiple core sites or centers of power, along with a primary capital. Furthermore, the designation of polities as either a core or a periphery is not always clearly delineated. A polity may in fact be simultaneously both a core and a periphery. Administrative centers, such as the Inca site of Huánuco Pampa, for example, would have been a core polity in relation to its surrounding neighboring towns and villages, yet at the same time, Huánuco Pampa owed certain obligations to its core polity, the Inca capital of Cuzco.¹⁷ Since these relationships are constantly maintained and negotiated, the nature of the union between core and peripheral sites is likewise fluid and subject to change.¹⁸ For example, a former cooperative polity might be rewarded for its loyalty by being built up as an administrative center for the empire, donning the rank and authority of a core.¹⁹

These new approaches to the core-periphery model have overcome some of its previous limitations, but these studies still do not include situations where relationships, whether economic or political, are brokered between two polities without any formal bonds of subjection. Instead, these models are based on the assumption that whenever there exists a ‘homeland’ and a network of ‘colonies’ that interact with one another, there must be an authoritative system in place, with the core polity typically maintaining the upper hand. This supposition is problematic, especially when trying to understand the early dynamics of secondary state formation. These models do not provide a means for uncovering the motivation for either colonists or host communities to enter into this enterprise – the assumption is that neither side has a choice in the

15 Kohl (1987, 20).

16 D’Altroy (1992, 15).

17 Morris and Thompson (1985, 118–138).

18 Grosboll (1993, 47–53).

19 Stanish (1997, 196).

matter, either due to a monarch's coercion, or because the opportunity is too attractive to even consider rejecting. It would be a mistake, however, to ignore the great difficulties for host and colonist alike involved in colonization of a new social and physical landscape. Similarly, previous models are based on the assumption that cores send out colonists only when they are able to oversee, directly or indirectly, the politics and economies of the colony; this hardly seems reasonable for an early state, which lacks the template for managing and controlling territories, sometimes separated by an ocean.

What is needed, then, is a model to understand the precursors to full-blown imperialism. One solution is to apply models used to understand the dynamics of trade diasporas to the task of understanding the early configurations of colonization, outlining the potential paths towards increased social complexity in a given society. In his pioneering study of ethnically distinct Hausa traders in West Africa, Abner Cohen²⁰ defined trade diasporas as communities that had been transported to distant lands with the goal of enlarging the scope of commerce within their natal homelands. Cohen concluded that the ability of states to commission and deploy trading colonies need not entail the same brand of hegemonic 18th- and 19th-century European colonialism;²¹ rather, colonies could be created at a low cost and managed through indirect means – “colonies without colonialism.”^{22,23} This conceptual shift has encouraged scholars of the ancient world to likewise reevaluate the presence of trading colonies as a sign of an asymmetrical, economic world system. For example, historians have long noted the connection between the development of secondary state institutions in Bronze Age Crete and Mycenae and their economic contact with neighboring state societies in the Near East, Egypt, and the eastern Mediterranean.²⁴ Traditionally, archaeologists and historians argued that Minoan Crete was nothing more than an Egyptian or Syrian colony, concluding that the sudden appearance of states in the Aegean merited no further

20 Cohen (1971).

21 Curtin (1984); Orser (1998).

22 Stein (2002a).

23 Algaze (1989, 1993, 2005) and Stein (1999, 2005) have developed economic models that echo this view through research on Uruk-period Mesopotamia, arguing that it grew in size and wealth by establishing trade diasporas throughout Anatolia, Iran, and Syria – colonies that did not dominate their local host populations. A similar trajectory of non-dominance over local populations can likewise be found in the Middle Horizon period in South America, with the widespread distribution of colonies throughout the realm of the Tiwanaku Empire (Goldstein 2005) suggesting that this pattern is far from a single, historically specific event.

24 Parkinson and Galaty (2007); Randsborg (2000).

explanation²⁵ as these developments were simply transported and crafted by already existing states. In the 1970s and 1980s, however, these views were called into doubt as a growing body of evidence revealed a much slower and more gradual local development of secondary state institutions in Crete and throughout the Greek Peloponnesus. Armed with new environmental research, Renfrew²⁶ and others began to reframe the Minoan state as an indigenous development formed more or less independently of exposure to neighboring state societies. This perspective encouraged researchers to explore the process of state formation in the Aegean in greater detail rather than to simply dismiss these developments as a byproduct of Egyptian or Syrian economic activity. Investigations into the dynamics of Bronze Age Aegean societies, however, continued to demonstrate that state formation in this region was markedly different from the kinds of processes noted in primary state formation.²⁷ Rather than meeting our expectations for primary states, Aegean states instead represent the first generation of secondary states to spring up in the periphery of more mature state societies.²⁸ Long-distance economic contact and the constant spread and increase in the number of trading colonies are now considered to have played a heavy role in the development of social complexity in the Aegean;²⁹ unlike early theories, newer models tend to acknowledge that local environmental and social conditions of the trading colony itself are as important as their contacts with primary states. The later development of the Greek polis, with its own network of colonies throughout the Mediterranean and the Near East, is a prime example of this view. Similar in organization to a trade diaspora, the Greek polis maintained a semi-independent relationship with the homeland, while the homeland did not in any significant way *control* these poleis.³⁰ Over time, some of the poleis themselves became states in their own right, arguably in part through the synergy of local variables as well as through their exposure to local, non-Greek goods and traditions, all of which created a fertile environment for social change. What we can conclude from the Greek example is that world systems and earth systems³¹ both played a role in the processes of social change that led to development of secondary state

25 Childe (1951).

26 Renfrew (1972).

27 Small (1999).

28 Parkinson and Galaty (2007, 118).

29 Renfrew (1986).

30 Parkinson and Galaty (2007, 118); Randsborg (2000, 171).

31 Hornborg and Crumley (2007); Shelley and Flint (2000).

institutions, reminding us that we cannot ignore ecology any more than we can social agency.

Iceland, a definitively Norse colony, makes for an excellent case study on processes of secondary state formation in a colonial-frontier setting, prompting the question: How heavy was the hand of Iceland's monarchical neighbors in the development of increased social complexity in the 13th century? As with the Aegean case study, scholars are divided along lines of indigenous vs. external social processes. As we saw in Chapter 2, archaeologists have tended to favor indigenous development, often citing environmental degradation as a driving force. Historians, relying on their analysis of medieval texts, have instead argued that the Iceland was colonized as part of Norway's ambition to establish imperial territories stretching from northern Europe to the North Atlantic in the 9th century, Iceland's 13th century development of state institutions, argue literary historians, therefore needs no further investigation – complexity was simply derivative, with Icelandic society emulating the social structure of their colonial rulers in Norway. These two seemingly conflicting views are the result of a methodological impasse: a lack of scholarship on the nature of Norse trading colonies and a terse debate over the usability of Icelandic texts from the medieval period. In what follows, I outline a methodological approach to the complications of the Icelandic documentary record, applying anthropological models of diasporic communities to examine in light of these documents how local and external forces converged to create an atmosphere ripe for social change.

3.2 The Icelandic Sagas: Sources of Evidence, Sources of Contention

Early scholarship of medieval Icelandic archaeology and history was firmly rooted in the belief that the family sagas, which originated through a rich oral tradition, were as historically accurate and reliable as any history written today, despite the deep passage of time between when the events occurred and when they were consigned to the page. In the wake of 19th-century advances in literary scholarship, however, philologists began to question the ability of oral narratives to preserve the intricacies of historical detail, as well as the circumstances of their transference from spoken performance to written text.³² Texts once universally lauded for their historicity – including the Icelandic sagas, as well as texts such as *The Iliad* – fell under scrutiny, resulting in Iceland in the formation of two literary camps: the *Freiprosa* ('free-prose') camp who emphasized

32 Sigurðsson (2004, 285–286).

traditional oral narratives as likely sources for the origin of the stories captured in the sagas; and the *Buchprosa* ('book-prose') camp who stressed the role of the individual writer.^{33, 34} Scholars of the free-prose school suggested that while the sagas contained elements of the fantastical, they were grounded in the social memory of societies preserved through a rich storytelling tradition, and as such, can be used by modern historians to help recreate the life-ways of medieval Icelanders. This approach was rejected by the book-prose school, which suggested that the sagas were the work of individual authors and relied only marginally on an older oral tradition. In this view, the sagas, and the family sagas in particular, were works of literary grandeur that invented a past through the genius of the author, and cannot be seen as useful historical sources for understanding the settlement period of Iceland.³⁵ At best, they reflect how authors in the 12th and 13th centuries idealized their contemporary society and were thus a form of wish fulfillment rather than an accurate depiction of the past.³⁶ While the 13th century was plagued with violence, corruption, and (some argue) Norwegian domination, local audiences could take refuge in the world of heroism and honor depicted in sagas of the settlement of Iceland. The intention of the authors was to create a world in contrast to their own troubling times, perhaps to inspire change, or perhaps merely to entertain. At worst, however, the book-prose school considered these texts as deliberate lies, used as propagandistic social capital by rivaling families to validate their families' respective claims to superiority and local power under allegiance to the Norwegian king. Through written versions of the sagas, a few specific families employed a fictionalized version of history as a state-building tool:

[T]his representation of the past, initiated by Ari and elaborated to baroque proportions by the subsequent two centuries of scholarship, had little to do with any 'genuine' traditions about the *landnám* that may have existed at that time. Instead, it was probably generated by the social and cultural needs of the Icelandic intelligentsia in the High Middle Ages.³⁷

Writing, according to book-prose theory, was ultimately controlled by elites who possessed the finance and skill to commission the production of texts,

33 Andreas Heusler, a German literary historian of Norse traditions, defined the schools *Freiproza* and *Buchprosa* at the turn of the 20th century.

34 Sigurðsson (2004, 285).

35 Nordal (1940, 1953); Steblinkamenskij (1973).

36 Tomasson (1980, 148–157).

37 Friðriksson and Vésteinsson (2003).

and was by in large a reflection of elite interests and had little concern for maintaining a sense of historical accuracy. Further, scholars in the book-prose camp have raised the issue of the timing: written texts first appear in the 12th century, a time when Icelanders possibly saw themselves as marginalized subjects under the Norwegian Crown,³⁸ an indication of the cultural cringe phenomenon found among subjugated populations.^{39, 40} The first texts date to the 12th century⁴¹ with a subsequent flourishing of saga writing in the 13th century. Why then and not earlier? The family sagas depict what has been referred to as a 'golden age' – perhaps an attempt to create a sense of Icelandic independence at a time of which they enjoyed very little. For example, the introduction to *Landnámabók*, believed to have been written by medieval historian Ari Þorgilsson, asserts the value of writing about the settlement period by suggesting that “we can better meet the criticism of foreigners when they accuse us of being descended from slaves or scoundrels, if we know for certain the truth about our ancestry.”⁴² Hastrup goes so far to suggest that the ‘golden age’ depicted in the family sagas reflects a society that never existed, other than as an idealized, invented society proposed as a model of what life could be, if Icelanders could only throw off the shackles of foreign domination:

What we are witnessing is a paradoxical development of a dual history – one that was native and exclusively Icelandic, and another that was foreign and inclusive. The symbolic stress on distinction as traditionally conceived in both the literary and the oral tradition gave rise to a particular view of Icelandicness that we term Uchronic. If Utopia is a place out of the world, Uchronic is a time out of history. In many ways, I would argue, the Icelanders entertained a Uchronic vision of their history, symbolically reproducing the myth of distinction and autonomy, and of a society of free farmers.⁴³

Further compounding this debate is the existence of two treaties between Norway and Iceland, *Gissurarsáttmáli* (“Gissur’s Covenant”) and the *Gamli*

38 Glazyrina (1997).

39 Hastrup (1990, 280–295, 2004); Hume (1993); Whaley (1997, 2000).

40 Several literary studies, for example, have noted a common theme in the sagas of Icelanders traveling abroad and becoming the favored guests of their hosts, able to impress and outdo anyone they meet (Ashurt 1997; Bagge 1992; Finlay 1997; Gaskins 1998).

41 Ólason (2005); Quinn (2000).

42 *Landnámabók* 972, 6.

43 Hastrup (2004, 279).

Sáttmáli ("The Old Covenant"). These texts specifically declare Iceland's loyalty to the Norwegian State, first in *Gissurarsáttmáli*, believed to have been drafted around 1262 A.D. between the chieftain Gissur Þorvaldsson of Skagafjörður and King Hákon IV, and later renewed in the *Gamli Sáttmáli* treaty drafted by King Mágnus VI in 1302 A.D. Both of these treaties carefully lay out the rights and privileges Icelanders were to receive in exchange for supporting the sovereignty of the Norwegian king. The treaties are mentioned in a few later sagas; *Hákonar saga Hákonarsonar* (13th century) for example, describes how Icelanders lost their political independence to Norway in the events leading up to a formal declaration of loyalty and sovereignty to King Hákon in 1263. The text, penned by Sturla Þóðarson, an Icelandic chieftain and writer, suggests that Hákon conquered Iceland not by military means, but by cleverly pitting rivals against one another; Hákon merely had to wait patiently for one of these factions to seek his help. Some scholars have questioned the date of the *Gamli Sáttmáli*, however, suggesting that it was in fact signed at a much earlier date (Boulhosa 2005). If this is true, then it is possible that the sequence of events as described in *Hákonar saga Hákonarsonar* is merely fiction, and that Icelanders already long before the 13th century had lost any degree of independence.

If we are to take up the respective challenges presented by free-prosists and book-prosists, we must find a way to methodologically examine the claims of each school. These two theories share an inherent flaw: they have not put forth a means to critically evaluate their central tenets. Free-prosists rely on the assumption that the thematically older family sagas are based on oral narratives, which book-prosists dismiss for lack of direct evidence of any oral narratives – it is impossible to ever know with any certainty that such a tradition actually existed. Book-prose theories, on the other hand, advocate that the sagas reflect an imaginary world and are purely the creation of their authors, but these theories likewise offer no means of methodically 'proving' that the sagas writers wrote independently of a prescribed social memory of an actually existing past, nor have book-prosists sufficiently demonstrated that the sagas were consciously employed as propaganda by a calculating chief. This circular reasoning has forced the free-prose vs. book-prose debate to a standstill, with an unfortunate amount of mud-slinging along the way.

These lines of argumentation have not proven useful for understanding the lifeways of medieval Icelanders. Furthermore, neither literary school has adequately defined what it means by 'history' and 'historicity'. Modern researchers must avoid the trap of assuming that what we define as 'history' today can be uniformly applied to ancient and medieval texts. Throughout the Middle Ages, historical treatises or *historia* were "chronologically oriented narratives...history was [therefore] the literary product of scholarly activity and was placed

within the field of grammar and rhetoric.”⁴⁴ Medieval writers did not draw distinctions between the corporal and mystical in the same way that a modern historian might; the division between an experienced reality and a legendary world where humans could encounter supernatural beings in the form of gods, beasts, and ghosts was not firmly implanted in the medieval psyche. For example, it is unlikely that humans lived among the trolls or battled a revenant as we are told in *Grettir's saga*, but it is likely that some individuals were legally declared outlaws and sentenced to live for a period of time in exile as is also described in this text. Likewise, accounts of some events that seem fantastical, such as Leifr Eiríksson's sailing to Vinland, have since been shown to be based on fact, confirmed through archaeological investigations at L'Anse aux Meadows.⁴⁵

These examples illustrate two crucial avenues for future saga research: first, that scholars need to explicitly define the term ‘history’; and second, that saga research can benefit from interdisciplinary studies. Acknowledging that the very definition of ‘history’ is culturally and temporally specific brings to the fore the need to critically examine the historical standard modern researchers have placed upon medieval texts.

Entering this fray is a growing body of archaeological data and a terse divide between those scholars who advocate the use of medieval texts in their analyses of the material record and those who suggest these texts are better left to literature departments. While archaeology in Iceland, as in many countries, was born out of an early 19th-century nationalist movement inexorably linked to saga studies, more recent inquiry into these texts has highlighted countless contradictions in the portrayal of everyday life in Icelandic medieval society, producing a familiar incompatibility between text and artifacts.⁴⁶ On the surface the validity of the documentary record itself seems to be compromised by the portrayal of two distinct Icelandic societies: a 9th- and 10th-century communal frontier society occupied in constructing a new social landscape centered on an agro-pastoral economy, as depicted in the family sagas, juxtaposed with a proto-aristocratic manorial society teetering on the edge of social attenuation, as described in the 12th- and 13th-century contemporary sagas. This discrepancy in social portraits has been a point of contention among saga historians and archaeologists: these differences could reflect two different social realities separated by time even though both sets of texts were written roughly

44 Würth (2005, 155).

45 Ingstad (1985); Sigurðsson (2004, 272); Wallace (2000).

46 Friðriksson (1994).

around the same time;⁴⁷ they could represent the use of allegorical devices in the family sagas to promote the propaganda of ambitious chiefs and elites in the 13th century;⁴⁸ or they could reflect a fictional golden age created as part of a push for a 'national' identity and drive for political independence from foreign domination.⁴⁹ These doubts over the value of the sagas as sources has been "music to the ears of the archaeological community, [concluding that] the patent unreliability of [these texts] makes them worthless as historical sources and that they should therefore be rejected en masse."⁵⁰ Archaeological studies frequently adopt a cautious attitude and leave out analyses of textual information, concentrating on issues of environmental change in Iceland (see Chapter 2) as a dominant force in social change.⁵¹ Models centered on environmental change leave little room for alternative views, relegating studies of the different cosmologies described in the family and Sturlunga sagas to an examination of temporal bias on the part of the saga writers. The conclusion from these approaches is that the data gleaned from close reading of the texts and the data from the material records are entirely incompatible, begging the question: which data are *more* accurate? Who is better equipped to reveal past lifeways in Iceland, the historian or the archaeologist?

3.3 Is the Spade Mightier than the Pen?

Archaeology and history have maintained an anxious relationship. Archaeologists and historians can unite behind the common desire to understand the past, but at the same time they are wary of each others' datasets, based on the perceived greater reliability of one's own discipline relative to others in its ability to glean 'truth' about the past. Historians can boast that while they work with texts that convey *messages* revealing past *events*, archaeologists are left to manage *mute artifacts* that illustrate less specific *situations*.⁵² Archaeologists, on the other hand, counter that while historians can only hope to examine the elite, an *indiscriminating* material record has granted them admission into the daily life of all members of society.⁵³

47 Durrenberger (1990b); W.I. Miller (1986).

48 Friðriksson and Vésteinsson (2003).

49 Hastrup (2004).

50 Sigurðsson (2004, 254).

51 McGovern (1990); McGovern et al. (1988); Sveinbjarnardóttir (1992).

52 Paynter (2000); Vansina (1995, 370).

53 Brumfield (2003, 208–209); Kehoe and Emmerichs (1999).

Representing historians' traditionally negative view of archaeology, Philip Grierson wrote that:

the archaeological evidence...in its very nature substitutes inference for explanation. It has been said that the spade cannot lie, but it owes this merit to the fact that it cannot even speak.⁵⁴

Against this view, John Moreland⁵⁵ argues that archaeologists and historians have now moved beyond a 'servant and master' relationship where the word always took precedence over artifacts. In the last fifty years, middle-range theories and more rigorous hypothesis testing models have fueled a methodological revolution within the discipline of archaeology, effectively elevating the profession above its traditional rank of 'handmaiden' to historical projects, where texts provided the social framework and artifacts were simply supplementary material to illustrate or defend the word. While this current partnership is evident in historical projects' frequent use of radiocarbon dates obtained from excavations, "most historians are simply not interested in the results of archaeology."⁵⁶ This reluctance in part stems from historians' lack of understanding of archaeological methodology, but also from the dominant view that the reconstructions of the past generated by history and those by archaeology produce profound dissonances that are impossible to reconcile. This mutual incompatibility prohibits the two from neatly dovetailing into a coherent whole, and as such, has created a terse divide between what should be partnered enterprises.⁵⁷

The further one goes back in time, the more fractured these camps become. Early histories often read more like myth and general storytelling to the discerning modern eye, with some scholars ready to consign these categories of text to the realm of fiction and therefore squarely outside the range of viable data for historian and archaeologist alike. To complicate the matter, many early texts, such as *Beowulf*, the *Iliad*, and the Hebrew Bible, originated from an oral tradition, creating alarm over the *accuracy* and *faithfulness* of these texts.⁵⁸ Should we think of the writers of these texts as recorders who did little more than set down on vellum or parchment the histories preserved through an oral story-telling tradition, or were these writers innovators, who used the names,

54 Grierson (1959, 129).

55 Moreland (2001).

56 Vansina (1995, 369).

57 Robertshaw (2000).

58 Levy and Higham (2005).

places, and even themes from traditional stories as a mechanism for creating a symbiosis between the word and the reader? This subject has been the flagship of literary critics who have framed the debate between issues of *historicity*, whereby scholars agree that oral narratives can be preserved over multiple generations and later transferred to text that nevertheless must be evaluated for accuracy, and issues of *intertextuality*, whereby texts are seen as original creations that, despite some resonance with some elements of an older oral tradition, must therefore be evaluated as a literary production rather than an historical one.⁵⁹ Both of these positions leave unresolved the question: how can we ever know the historical content of oral narratives several centuries removed from their last storyteller?

At the root of all these debates is a methodological seed: how can text and the material record, dissimilar in nature and context, ever be integrated? Even more puzzlingly, how can texts seemingly devoid of proper historical reporting find acceptable use as a source of information to reconstruct the past? These concerns can be addressed by renegotiating the relationship between history and archaeology, and more specifically by re-centering our focus to examine the ways artifacts and pre-modern texts alike can play active roles in the production, negotiation, and transformation of social relations in past and present societies.⁶⁰ I argue that the same critical methodologies can be applied to both archaeological and textual data to objectively understand the social context of ancient societies.

I propose here a methodology for incorporating pre-modern textual data with archaeological material by taking a different approach – investigating which types of information contained in the sagas can be used to uncover evidence of past lifeways, rather than scrutinizing potential anachronisms in the texts solely in order to identify the fictionalized elements. An anthropological methodology that incorporates both text and material culture must address three primary challenges: first, the methodology must be able to assess the ability of a pre-modern text to project a balanced image not only of its contemporary period, but also of the past periods it describes; second, the methodology must address the limitations of memory and the methods by which oral traditions seek to maintain a consistent depiction of the past; and lastly, the methodology must be able to show that through an anthropological approach, one can broaden our definition of history as a record of past lifeways, rather than remaining confined to the traditional meaning of history as confined to

59 Hanks (1989); Pálsson (1992, 1995).

60 Van Dyke and Alcock (2003); Brumfield (2003, 207–208); Levy and Higham (2005); Moreland (2001, 31).

solely the chronological events and deeds of ‘great men’ and ‘great battles’. This chapter will address each of these challenges by exploring how the historicity of the sagas has been disputed and how a methodology grounded in anthropology can ably combine textual and archaeological materials, imparting a panoramic vision rather than a synoptic view of the past. With this methodology in place, we can then revisit the medieval texts to examine the processes of secondary state formation, specifically addressing the Norwegian role in Iceland’s path to statehood.

3.4 The Ability of Text to Reflect Reality

The book-prose theory’s proponents and detractors alike acknowledge the call for critically evaluating texts. These debates have produced fruitful theories and methodical strategies for analyzing pre-modern as well as modern texts, highlighting the necessity of understanding the personal and social context under which the author wrote. If we are to use pre-modern texts to approach a sense of a past reality, one must grapple with the distinction observed by Halldór Laxness in his novel *Christianity at Glacier*: “the difference between a novelist and a historian is this, that the former tells lies deliberately and for the fun of it; the historian tells lies in his simplicity and imagines he is telling the truth.”⁶¹ As Laxness suggests, in examining any text, medieval or otherwise, one must devise a strategy for establishing the *intention* of the document, as a reflection of either an invented or lived event. In doing so, we bring to the fore a concern for the intentionality of the author – that is, the author’s purpose for committing the telling of these events and ideas to a written format – and secondly, in making these ideas more permanent, questions about the intended audience of that text. Laxness also keenly observes that no text can ever reflect an entire universe of ideas and experiences of a society, and must choose to record only a glimpse of that universe, a narrow portion of a historical reality. However, psychology and cognitive psychology have demonstrated that this is not simply a question of honesty, but rather an issue of how the human mind operates. Despite the once common belief among anthropologists and sociologists that identity and reality are the constructs of the collective, developments in cognitive psychology have produced a startling revelation: in neurological terms, each individual mind processes and creates a distinct and unique reality, confirmed physiologically by distinct neurological thumbprints or signatures, leading many scholars to suggest that there can in fact be no single or

61 Laxness (1968).

collective version of a 'true' reality.⁶² To complicate the matter even further, not only can there be in a sense multiple realities, but even at an individual level, reality is not static. Under different stimuli or contexts, the brain can process information differently, creating thousands of realities for every individual. Swiss linguist Ferdinand de Saussure had already noted this phenomenon in the mid-19th century when he observed that language events behaved in similar fashion to an open electrical circuit, arguing that all communication required at least two nodes to complete the circuit and successfully convey a message. Saussure concluded that words, both verbal and written, are not defined by the objects they signify, but by their relation to each other: all successful communicative transmissions can make sense only in relation to the nodes or speakers.⁶³ This means that even speakers of a shared language independently make words meaningful. While speakers of a shared language use a similar structure or hardware – grammar, syntax, and the like – the web of associated significance and comprehension is in fact unique to the individual. Through language, individuals make sense of their surroundings and their interaction within this environment. However, individuals by themselves do not possess a monolithic understanding of reality. Derrida, building on Saussure's model, argued that speech events are not only determined by the relationships between nodes or participants, and furthermore that these relationships themselves are not fixed, but change depending on the contexts in which they are used.⁶⁴ Individual comprehension is not fixed; rather, each individual has a multi-vocal repertoire of knowledge of their world, dependent on context.⁶⁵ Building on these ideas are the fields of postmodernism⁶⁶ and literary theory,⁶⁷ which posit that the meaning of texts is likewise dependent on an individual's reading or interpretation of the relationship of the words, which is in turn dependant on how the reader's mind builds relationships of understanding, which is ultimately shaped by both context and past experience.⁶⁸ The questions raised by these theories of authorial intention and reader response present a particular problem for understanding pre-modern texts, whose authors, in many instances anonymous, left behind few clues of the experiences that shaped the words they wrote. We as a modern audience

62 Halbwachs (1992); Roediger and Goff (1998); Schacter (1996).

63 Saussure (1959, 9).

64 Derrida (1973).

65 Clark (1996); Green (1996); Hymes (1972).

66 Foucault (1977, 1978); Rabinow (1983); Roslato (1989).

67 Ankersmit (1989).

68 Johnstone (1996); Newmeyer (1986).

run the risk of misinterpreting the author's intention, which is at best always elusive as any text from any time period can be interpreted differently depending on the reader. Can historians and anthropologists ever become sufficiently literate readers of pre-modern texts? *Intersubjectivity, discourse, epistemology, textualism, multivocality, multiplicity of readings, and relative truths* have become the watchwords of the new literary theory vanguard, often relegating the quest for historical reconstructions to the realm of impossibility.

One path out of this morass is to acknowledge that, despite most modern historians' privileging of *accuracy* when evaluating any text's claims to historical representation of the past, attention should also be given to the *usability* of that past as an important factor in the writing of such histories.⁶⁹ This distinction drawn between accuracy and usability reflects a basic distinction made by the human mind in order to store and recall different types of memories: individual or personal memories tend to focus on the accuracy of the detail, while collective or shared memories (i.e., public or cultural) operate on the usability of that memory.⁷⁰ Usable histories are not static, but change given the demands of the society that uses them. The past is remembered and re-remembered because that remembrance can serve the present needs or concerns of a society. Recently, a number of archaeological and historical studies⁷¹ have pointedly demonstrated that ancient states likewise employed writing technologies to shape and govern their polities; to name just a few: Egyptian pharaohs more than once attempted to erase disfavored predecessors from monuments and king's lists;⁷² Virgil's *Aeneid* utilized Homer's meta-history of the Trojan War at the expense of Rome's Latin and Etruscan roots to create a new political and social identity as justification for the Augustan program of a single ruler for the Roman world;⁷³ and the Vijayanagara Empire created an ancestral connection to the earlier Chola Empire to demonstrate its imperial status in India.⁷⁴

The sagas likewise contain a mixture of individual memories, evident in their emphasis on precise detail, and elements of a shared history that were malleable to social demands, simultaneously reflecting the views of a 9th-century ethos and of a 13th-century one. While some societies erect

69 Wertsch (2002, 35).

70 Ibid., 40–51.

71 See Alcock (2002) and Van Dyke and Alcock (2003) for a survey of archaeological and historical examinations of how ancient societies utilized the past for political, ideological, and economic endeavors.

72 Meskell (2003).

73 Ando (2000).

74 Sinopoli (2003).

monuments to remember the past and create a sense of social solidarity, the Icelanders had the sagas. The telling of the sagas is the telling of the history of Iceland, and as such, served as a malleable form of social memory, “the construction of the collective notion about the way things were in the past.”⁷⁵ More was at play here than mere recounting of individual deeds; the oral, and later written, narratives of the sagas were a transformative force, inscribing a formerly blank landscape with meaning. The sagas are a material representation of the processes engaged to convert space to place, the backdrop to the actions of individuals throughout time. Examining the historicity of the sagas through the lens of both accuracy and usability enables us to develop an interdisciplinary methodology that incorporates both text and material culture in order to produce a social backdrop not only of the time in which these texts were written, but also of the period these texts purport to depict. We are fortunate that there are several instances of texts themselves explicitly addressing these issues. For example, in the introduction of *Heimskringla*, Snorri Sturlusson remarks on the value of accuracy in skaldic poetry written to commemorate the deeds of foreign princes and kings:

We regard all that to be true which is found in those poems about their expeditions and battles. It is to be sure the habit of poets to give the highest praise to those princes in whose presence they are: but no one would have dared to tell them to their faces about deeds which all who listened, as well as the prince himself, knew were only falsehoods and fabrications. That would have been mockery, not praise.⁷⁶

In a similar vein, Ari declares in his introduction of *Íslendingabók*: “And whatever is misstated in this history, one is duty-bound to prefer what proves to be most true.” These statements directly reflect their authors’ concern for faithfully retelling the past, as well as the acknowledgment that the intended audience would not tolerate a deliberate distortion of history.

3.5 The Power of the Oral Tradition

The previous discussion has illustrated potential avenues for modern researchers to evaluate how histories are shaped and documented. One such contested method was the ability of oral traditions to act as social memories of the past.

⁷⁵ Van Dyke and Alcock (2003, 2).

⁷⁶ Snorri Sturlusson cited in Karlsson (2000, 68).

While the compilers of the sagas could look to a limited number of other textual resources, such as land registries and law books, the greater part of what makes up the sagas as we now know them today were derived from a collective social memory in the form of an oral tradition.⁷⁷ The bard's profession of spinning tales of obstacles and glorious triumph in Nordic and Germanic society has a long history, captured most notoriously in the 8th-century text *Beowulf*. Just as *Beowulf* contains elements of its earlier oral form, the sagas are also the palimpsestic recording of mnemonic devices, containing for example a number of standardized kennings, a common feature found in memorized speech events. Likewise, popular individuals make frequent appearances in several of the sagas, but often under different names or variations on a name, precisely the type of detail that research into oral tradition has shown to be liable to alterations; however, when writers use other texts as a source, names are likely to be transferred unchanged between works.⁷⁸

Modern critics, however, are often skeptical about the ability of oral transmission to accurately record and manage information.⁷⁹ This view no doubt reflects our own logocentric world.⁸⁰ Jack Goody⁸¹ posits that writing has the ability to "make the implicit explicit" and must be viewed as a technology of the intellect or "codified ways of deliberately manipulating the environment to achieve some material objective."⁸² Goody suggests that communication is one such technology and has led to changes in individuals' cognitive processes and perception of the world, as well as inducing changes in social organization.⁸³ Likewise, Manuel Castells has argued that the power of information technology lies in its ability to make communication reliable and fluid, enabling the users of the technology to make more informed and efficient decisions.⁸⁴ La Bianca and Scham have shown how this same principal can be seen in antiquity, through the development of transportation and communicative technologies.⁸⁵ Goody and Castells, however, are describing a text-based form of communication; can the same be said of verbal communication? Goody draws a sharp division between literate and oral societies, suggesting

77 Byock (2001); Sørensen (1992).

78 Sigurðsson (2004, 27).

79 Hatim and Mason (1990).

80 Moreland (2001, 12, 33).

81 Goody (2000, 143).

82 Adams (1996) cited in Goody (2000, 132).

83 Goody (2000, 133–135; 1986, 171).

84 Castells (1996, 1997, 1998).

85 La Bianca and Scham (2006).

that only in literate societies can one find documented histories.⁸⁶ He further suggests that histories can only be produced when one can trace the past through organized thought made possible through the ability to make and compare lists.⁸⁷ Lacking the ability to compile lists and the limitations of memory, oral societies can only preserve the events of a single generation.⁸⁸ Goody is correct to assert that literacy almost certainly develops in response to the limitations and ambiguity of memory; however, his polarizing emphasis on the 'great divide' between literate and non-literate societies fails to consider that even highly literate societies can still maintain an active oral tradition.

Furthermore, as others have shown, the 'great divide' as depicted by Goody is a rather recent phenomenon.⁸⁹ Moreland suggests that in medieval Europe, texts were structured for recitation; they were meant to be heard, not seen, and as such, "scribes were mediators between the spoken and written worlds; through their practice, they embedded the voices of the former in the latter."⁹⁰ It was not until after the Protestant Reformation, which devalued the importance of objects, and the invention of the printing press, which allowed for a rapid dissemination of the printed word, did the hazy view of our now logocentric world come into focus.⁹¹ Prior to the 16th and 17th centuries, however, the oral and written narratives were not so sharply delineated. In medieval Iceland, for example, one of the earliest written texts was the *Grágás*, the Icelandic law codes. The *Grágás* stipulates that the laws must be maintained and enforced by law-speakers, who were chosen by chiefs to serve as arbitrators in the legal proceedings held at the national assembly or Alþing.⁹² Once a year, law-speakers would be tested on their ability to recite portions of the law codes. What gave these law-speakers their authority was not their ability to consult the *Grágás*, but to know from memory and to possess the ability to recite the laws. As Niditch contends for most pre-modern societies, the majority of medieval Icelanders were probably not literate and, therefore, valued and assessed information through an individual's ability to verbally communicate ideas.⁹³ Oral narratives taken from the ethnographic record tend to follow a specific organizational form, acting as memory prompts and also

86 Goody (1986, 20).

87 Ibid., 37.

88 Ibid., 54–56.

89 Moreland (2001, 35).

90 Ibid., 36.

91 Ibid., 57.

92 Byock (2001, 308–319).

93 Niditch (1996).

establishing a familiar structure that audiences can follow and use as a reference point from which to determine whether the orator is telling the story correctly.⁹⁴ This would perhaps explain some of the uniformity to the narrating of events in the sagas, which, following a standard format, frequently begin with a genealogical overview and description of the landscape, followed by elements of foreshadowing to the buildup and ultimate resolution of tension. This loose standardization would have facilitated not only enlivening the story as entertainment, but also the remembering of the story, and may serve, as Ong suggests, as a cognitive tool for recalling memory, leading us to suggest that oral storytelling might have endowed the historical events thereby preserved with the ability to last numerous generations.⁹⁵

3.6 The Social Reality of Medieval Iceland Represented in Text and Archaeological Remains

Following the approaches of Byock,⁹⁶ Durrenberger,⁹⁷ and Miller⁹⁸ one way to avoid the pitfalls of incorporating medieval Icelandic texts into academic, historical analyses, is to situate both the family and contemporary sagas within a broader social and historical context by reading the sagas as a type of ethnography, allowing us to uncover patterns of social behavior that can then be compared with the material, archaeological record. Therefore, the question of whether there was ever a period in Icelandic history with greater cultural fluidity than that seen in the proto-aristocratic manorial society of the 13th century is aptly addressed by examining social relationships within the synergy of text and archaeology. To demonstrate the potential of this model, I have chosen to examine marriage and inheritance rights described in the family and contemporary sagas. This selection was not made arbitrarily, but was chosen to shift away from the usual focus on the power of chiefs, creating an alternative tool for examining potential changes in social mobility and status over time. The goal here is to examine the family sagas, which demonstrate marriage and inheritance practices for the early medieval period, and the contemporary Sturlunga sagas, which illustrate the late 11th through 13th centuries, looking for discernable patterns of behavior that can then be compared to the patterns

94 Niditch (1996, 20).

95 Ong (1982, 31–39).

96 Byock (2001, 212–214).

97 Durrenberger (1990b, 1992).

98 Miller (1990).

emerging from archaeological data. I hope to show that by using an interdisciplinary methodology, our debates will begin to transcend the impossible (and fruitless) task of proving or disproving the historicity of the sagas. I will argue that the sagas document a transformation of marriage practices, providing us with a vivid representation of the rise of an aristocratic class alongside shifting social identities for women, intimately tied, I posit, to changes in economy and household production seen in the archeological record (see also Chapters 4–7).

3.6.1 *Passions of the Free State: Marriage, Love, and Economy in Medieval Iceland*

As a prime agent in forging social alliances, marriage practices provide a keen insight into the degree of social mobility within the society as well as gender and class status. Cross-culturally, social mobility tends to decrease proportionately with the establishment of ascribed social status, limiting the viable number of potential marriage partners per class as alliances tend to be created only between members sharing similar social positions. Likewise, an increased control over matrimony corresponds with the higher tiers of social rank, with arguably more fluidity regarding marriage selection among the non-aristocratic members of society. The sagas focus heavily on the conflicts and concords that only love and a desire for power can elicit, providing the modern reader with an ethnographic window into the developing social arrangements of a medieval society. A cursory examination of the sagas reveals two distinct images of marriage and the status of women in Icelandic society, with a shrinking degree of freedom and influence in society over time. This transition in the status and role of women commenced around 1000 A.D., corresponding to changes in the political and economic configurations of the society (see also Chapter 1) – namely, the end of colonial land-taking and a shift in the economy away from the enterprise of men as warriors, towards the enterprise of women as weavers.

3.6.2 *Marriage and Women in the Early Social Order of Iceland, c.872–1050 A.D.*

Marriage in Iceland parallels practices found throughout Scandinavia and shows many similarities with the mixture of Roman and Germanic customs found in continental Germanic Kingdoms throughout the 5th through 8th centuries A.D. Like the Merovingians, the Icelandic practice of *Kaufefe*, or marriage by purchase, was an economic transaction that allied two families.⁹⁹ Unlike marriage practices in Norway and in the Germanic states of northwestern

99 Wemple (1981, 52).

Europe, however, settlement-period Iceland briefly revitalized an older Germanic custom, *Raubehe*, or marriage by capture: “During periods of wandering and endemic warfare men undoubtedly committed rape and other physical violence to obtain women and establish exogamous unions.”¹⁰⁰ From the *Landnámabók*, we know that men ‘acquired wives’ from abroad en route to Iceland. The family sagas, likewise, tacitly imply that men sometimes forcibly took women from abroad to be exploited as domestic slaves; once settled in Iceland, these women might have become wives to other colonists.¹⁰¹ Among settled populations in Iceland, however, *Raubehe* would have been a dysfunctional and risky practice, since a woman’s kinfolk could swiftly deliver retaliation and vengeance. It is likewise probably that no Norwegian women were married through *Raubehe*, as the practice was socially proscribed within Norse society. By contrast, *Kaufhe* would have been an accepted and powerful means of brokering alliances, mending hostilities, and offering a keen economic incentive.¹⁰² Through an analysis of several family sagas, Frank posits that marriage negotiations were always between men: the guardian of the woman – usually her father, but in some cases a brother or even a son if she was a widow seeking a subsequent marriage – and the suitor or his male guardian.¹⁰³ Usually after several meetings, if an alliance seemed promising, the suitor would make a proposal to the woman’s legal guardian rather than to the woman directly.

It is important to note that a woman’s guardian, typically her father, could not initiate the marriage of his daughter, but had to wait for a suitable candidate to appear, although ultimately it was up to the father to decide whether his daughter was marriageable. The one exception to this rule was allowed for cases where a father had reason to believe that his unmarried daughter had been intimate with a man and was or could become pregnant; only then could a father intervene actively on behalf of his compromised daughter. If the potential groom and the kinsmen of the would-be bride favored the informal proposal, two ceremonies, always in the presence of witnesses, were performed. The publicity of these ceremonies ensured the legality of the marriage and the legitimacy of any children that might result from the union.¹⁰⁴ The first ceremony was the formal betrothal statement: a declaration of the proposed union sealed by a handshake between the guardian and the suitor or in some

100 Jochens (1995, 17).

101 Hastrup (1985, 93–96); Jochens (1991, 361); Karras (1988, 73–77, 1992).

102 Damsholt (1984, 79).

103 Frank (1973, 472–473).

104 Jochens (1995, 83).

cases his representative, which may imply that sometimes the male suitor may have little involvement in the proposal. The woman's presence, on the other hand, was never required, but by law her audible consent or "with her own yes-word" (með jákvæði hennar sjálfrar) in the presence of witnesses was required.¹⁰⁵ On this occasion, the amount of the bride-price and dowry were fixed; the amount for each was dependent on the status of the families involved, but typically, if a woman's family was of a higher status than the man's family, a large bride-price was required. There is one instance, in *Njal's saga* of a dowry of eighty cows – a very high 'monetary' amount – but frequently the dowry seems to be the offering of a land grant that was to be shared and worked equally by the couple.¹⁰⁶ In the event of a divorce or the death of the husband, a woman was entitled to keep the bride-price. The second ceremony was the wedding itself, which required at least six witnesses, but preferred to include as many witnesses as possible – the wedding would only be valid as long as the witnesses were alive and could remember the wedding. The wedding took place within a set time after the betrothal and, according to *Grágás* K § 144, within one year after the bride-price was paid. Lastly, for the marriage to be legal, "bride-ale had to be drunk, and the groom led with lights to his wife's bed."¹⁰⁷

The most striking feature of marriages depicted in the family sagas is the frequent mention of fathers asking their daughters' consent to a marriage, even though by law, as described above, he was under no obligation to do so. In Chapter 23 of *Laxdæla saga*, Egil assured his daughter Thorgerd that he would not answer the spokesman of her potential suitor until he was certain how she stood on the match. After the meeting, Egil endorses the proposal while reaffirming the importance of her assent, telling Thorgerd that he has "left the matter for you to decide...however, I think it is easy to answer such a proposal for the match is a very credible one." Thorgerd retorts: "I have heard you say that you love me best of all your children, but now it seems you don't really mean it if you want to marry me off to a bondwoman's son, no matter how handsome and well decked out he is!" Egil persists in his persuasive efforts, informing her that the young man's mother is actually the daughter of an Irish king, thereby raising his status. Thorgerd would not be persuaded; rather than forcing her into the marriage, Egil rejects the suitor's proposal. The sentiment is echoed in Chapter 70 when Snorri declares to a suitor that his daughter "shall only marry the man who pleases her." Even after a proposal had been accepted by a male

105 *Diplomatarium Islandicum* 1, 287.

106 Byock (2001, 17–21).

107 Frank (1973, 475).

guardian, it seems that a woman could still persuade him to call off the wedding: for example, in Chapter 97 of *Njal's saga*, when Flosi's niece Hildigunnr does not wish to marry, Flosi assures Hildigunnr that "it is sufficient for me to call off the negotiations if you do not want to get married."

From these examples one can suggest that fathers often conferred with their daughters, a suggestion strengthened by the anger and frustration of some women when their assent is not asked.¹⁰⁸ Two key examples of this are Hallgerd in *Njal's saga* and Guðrún in *Laxdæla saga*. In both cases, these women are persuaded by their fathers to marry, and in both cases, the marriage does not end well for the husband. In chapters 9 and 11 of *Njal's Saga*, Hallgerd is told that her father has, without conferring with her, accepted and performed a betrothal ceremony with Þorvald, a well-respected and good-natured man, and that she is to wed to Þorvald in a month's time. Hallgerd was not pleased with the match or with her father's actions, commenting to him: "now I am certain of what I have been suspecting for a long time, namely, that you do not love me as much as you have always said you did, since you do not think it necessary to discuss this proposal with me; besides, I do not find this marriage as prestigious as you had promised me." Soon after the marriage, Hallgerd despises Þorvald's frugality and concocts a scheme to have Þorvald murdered. Hallgerd purposefully squanders away Þorvald's provisions of flour and dried fish, and then accuses of him of laziness and inability to provide for his household. She continues to provoke Þorvald until he slaps her out of rage. Þorvald concedes his guilt, immediately assembles a crew of men, and sets out to replenish their supply of fish. Hallgerd seizes the opportunity to enlist the aid of Thjostolf, her foster father who had supported Hallgerd's stance against marrying Þorvald. In a dramatic scene, Hallgerd tells Thjostolf how her husband has dishonored her, and to provoke a heated response from her foster father adds an angry jab his way: "if you cared for me you would not have been so far away." To make amends, Thjostolf promises to avenge her mistreatment. He sets sail to find Þorvald, and the two men engage in a brutal fight; Thjostolf kills Þorvald, thereby restoring Hallgerd's honor, as well as his own. Thjostolf returns to Hallgerd and declares that he has carried out an unspecified deed that "will permit you to marry a second time." Hallgerd returns with the news to her father, who can only concede that the failure of her marriage was his fault as he had neither consulted with her nor listened to Thjostolf's advice against forcing a daughter to marry. In the end, it is Hallgerd who has the upper hand, not her male kinsmen whom she is easily able to maneuver to comply with her demands. A similar situation occurs in *Laxdæla saga* (Chapter 34):

108 Jochens (1986b, 37).

Guðrún, betrothed by her father without her consent, “openly showed her displeasure over it, but there the matter stood.” For her family, the marriage was prestigious, as Guðrún’s family was of higher social status than the future groom, Þorvald, allowing her father to broker a marriage contract that stated that Guðrún alone would have control over the couple’s joint property. Guðrún shows no love for Þorvald, constantly demanding that he buy her expensive gifts; after Guðrún insists on a particularly extravagant gift, Þorvald slaps her out of rage. Guðrún now feels justified to leave Þorvald, but needs to ensure that a divorce would be lawful, allowing her to keep the dowry (i.e., her father’s land). She consulted a friend who suggested: “make him a shirt with a wide neck opening and then declare yourself divorced from him.” This shirt with a wide neck opening is literally called a shirt with “a divorce head hole” in the sagas. It was low enough that the nipples showed; a wife could legally divorce a husband who wore such a shirt. This custom is later echoed in a ruling from *Grágás* K § 155: “If women become so deviant that they wear men’s clothing, or whatever male fashion they adopt in order to be different, and likewise if men adopt women’s fashion, whatever form it takes, then the penalty is lesser outlawry.”

Lastly, the saga authors in a number of instances briefly touch upon romantic love and marriage. One example is from *The sagas of Hallfred Troublesome-Poet*: “Hallfred set his heart on Ingibjörg and asked her to marry her. She said, ‘Not everything would be taken care of then, for you are a Christian and a foreigner here. But you should go see my father if this is what you want’. He did so, and put the suit before Thorir and they easily settled the matter. And so it came about that Hallfred married Ingibjörg, and he loved her deeply.”¹⁰⁹

While it is tempting to suggest that all Icelandic women shared Thorgerd’s and Hildigunnr’s advantage of having male guardians who conferred with them on marriage opportunities, or Hallfred’s and Ingibjörg’s ability to marry for love, or even with Hallegerd’s and Guðrún’s ability to end marriages they deemed undesirable, the fact that a far greater number of marriages in the family sagas describe women marrying at the behest of their guardians would suggest that this was closer to the reality. In most cases the acceptance of a marriage is tacit and passive: “the girl did not refuse” or “did not say no on her behalf and asked her father to decide” or “it was not against her will.”¹¹⁰ Unlike the contemporary sagas, as we shall see, the family sagas at least play lip service to the emotions of the couple and the legal requirement of consent. It is also necessary to stress that the women described in the examples above all

109 *The sagas of Hallfred Troublesome-Poet* (1997, 94).

110 Jochens (1986b, 38).

came from wealthy families, so it is likely that these fathers had a vested interest in ensuring that a marriage alliance would be profitable and not end unfavorably, which would complicate the task of marrying off his other children. Furthermore, the family sagas implicitly suggest that girls of less wealthy families were often the prey of men seeking sexual gratification, rather than wives.¹¹¹ These 'illicit love visits' often involved physical force and manipulation; in the event of pregnancies, there was little recourse for a woman if the man would not admit to the encounter. Social mobility through romantic liaison was, however, a feasible reality for some women of non-prestigious families, even for slaves. In *Laxdæla saga*, Hǫskuldr on a trip to Norway buys a beautiful slave, Melkorka; she becomes a member of Hǫskuldr's household and later the mother of his favorite son Óláfr, who subsequently inherits a considerable share of his father's land holdings. The saga suggests that Melkorka and Hǫskuldr's wife get along well together, but this may not have been the norm. In *Njal's saga*, Njal takes a concubine who is constantly at odds with his wife Bergthora. Njal's sons with both women stand to inherit adequately after his death, but unlike the case of Melkorka, Bergthora's sons challenge the right of Njal's illegitimate son to claim inheritance.

What emerges from the preceding discussion on marriage and divorce is a reality in which certain women could stand to gain considerable wealth through marriage. Women born into high status families could have a say in selecting a marriage partner, basing this choice on either affection or the perceived prestige the union might bring to her family. Varying degrees of social rigidity and fluidity are also present: some women seem able to work the social system advantageously to increase their status through marriage and alliances with wealthy men, while others are the victims of rape and deception. The image of women in the settlement-period social order is therefore multifaceted, full of positive opportunities as well as the malady of social restrictions.

Aud, one of the prominent land-takers, perhaps shows the maximum of what a woman could achieve in early medieval society. Without a husband or sons, she had to take initiatives and take on a male role if she and her family were to succeed in Iceland.¹¹² In the more settled societies of the Norway from which these settlers originated, women probably had fewer opportunities to play any role other than those of wife, mother, and housekeeper; however, "in the brief interval between leaving Norway and arriving in Iceland, some women clearly had to be more."¹¹³ Aud doubtless took advantage of the greater

111 Jochens (1991, 365–376).

112 Jesch (1991, 83).

113 Ibid.

opportunities and relaxed social constraints in the Norse colonies of the North Atlantic – romanticization of her image notwithstanding, she embodied the relatively greater possibilities that opened up for women in the frenzied push of the Viking colonization. Aud and her contemporaries entered a physical and social landscape both vacant and unwritten, not yet closed to innovations offered by women. The sagas contain examples of women actively involved in the shaping of the new country: through their labor, alongside that of men, women were energetic participants in the establishing of farmsteads, creating a new society that was cemented through marriage. In this society, it would seem that women and men could act somewhat freely on their affections for one another; however, these acts, if deemed socially reckless, would not be tolerated. As we will see, in comparison to the later Sturlunga period, couples seem to have greater flexibility in entering into and dissolving marriages.

3.6.3 *Marriage and Women in the Sturlunga Period, c.1050–1270 A.D.*

Textual and archaeological data indicate that by the mid-11th century social transformations were underway in Icelandic society. These changes included an increase in economic activity and the solidification of property rights (see also Chapter 1). Modifications in economy and land ownership can also be viewed through correlating changes in marriage alliances, which overall illustrate parents' greater concern to broker socially beneficial marriages that will either keep the family fortune in the hands of its kinfolk or will garner greater wealth through the union of two equally powerful families. At the same time, however, the strategy of 'marrying up' ceases to be a viable option for most families, as the pool of possible marriage partners shrinks and is consigned to class. Overall, both men and women have less flexibility in choosing their spouse, as marriage becomes big business and a bargaining chip in the game for aristocratic control.

The procedure of a marriage, with three public ceremonies, does not seem to have changed; additionally, according to *Grágás* K § 144, "a woman is betrothed when the man taking her has witnesses to witness that the other then gives him that woman in legal betrothal as a match sound and warrantable." It is worth noting that if the woman is found not to be a sound match due to some 'defect' then "the penalty is lesser outlawry for the man who wittingly gave her in betrothal." In contrast to the settlement period, greater emphasis is placed on the concept of *jafnræði*, an 'equal match', which refers to both social prestige and to wealth. In fact, *Grágás* K § 148 states that "if people join in marriage who own less property than 120 ounce-units in legal tender [silver], six ell ounce units [cloth], besides their everyday clothing and are without dependents [if they had dependents additional means were required] then their

penalty is lesser outlawry, unless the woman is past childbearing.” If the couple did not agree to dissolve the union, they were forced to leave the country until they owned 120-ounce units or more or when the woman was past childbearing. While the family sagas describe the desire for prestigious marriage matches, the pursuit of a suitable match probably had more to do with ensuring a marriage of equal social standing (free versus slave). There is little indication to suggest that marriage alliances were confined by matters of wealth, as Guðrún’s marriage to Þorvald in *Laxdæla saga* suggests. The *Grágás*, however, demonstrates that wealth is a clear requirement in marriage. This pattern is understandable given the social context where land is limited and competition is intense. The end result of this marriage regulation was to stymie social mobility, as it prohibited marriage across wealth positions. Further, the proviso that a couple needed to have a certain basic level of wealth to even consider marriage would have further complicated the creation of alliances and economic networks, since marriage was, in both cases, the key means for fostering these kinds of relationships.

The contemporary sagas are in agreement that the less a man saw of a girl before he proposed to her father or guardian, the better chance he had of winning her – and staying alive. “The sagas all agree in representing courtship as the single most deadly pastime for the young Icelandic male”; in fact most of the eighteen courtship stories found in the contemporary sagas end with the death of the suitor.¹¹⁴ The commonplace belief that courtship could have dire consequences highlights parental control over marriages. A young man who courts a girl is probably not considering her family’s financial assets; a marriage solely for love could become a detriment to his family who relied on marriage as a means of brokering economic partnerships between families. It is, perhaps, not surprising then that in the contemporary sagas, in contrast to the family sagas, we cannot find even a single case of a father asking for his daughter’s consent to a marriage match.¹¹⁵ This likewise demonstrates the heightened need for parents to carefully and deliberately select *jafnræði* for their children, as marriage had in a sense become big business for a family. In the settlement period, marriage had been a crucial means for a woman to increase her wealth and social standing in a society, and no doubt also affected the affluence of her family; in the Sturlunga period, in a society where property was fixed at a high price, marriage assumed far greater economic clout as a means for land to change hands.

¹¹⁴ Frank (1973, 476).

¹¹⁵ Jochens (1986a, 145); Jochens (1986b, 42–47).

However, Jochens interprets the occurrence of fathers asking their daughters' approval to a marriage as tales contrived to promote Christian laws of consent rather than a reflection of a social reality of the early medieval period.¹¹⁶ In the family sagas, marriages acquired against the will of daughters, such as Hallgerd and Guðrún, often result in turbulence and death; in Jochens's view, the authors intended to demonstrate the social consequences of disobeying church doctrine.¹¹⁷ This conclusion, I would argue, is deeply entrenched in a Humanist¹¹⁸ view of the sagas and does not adequately evaluate changes in the social structure beyond the changes in religion.¹¹⁹ In fact, Jochens herself admits that while there were laws governing consent as early as 1189, even by the 15th century women were still married through forced consent. Why then would the sagas' writers have been so keen on the issue of consent or on the rights of women in general? Likewise, Icelandic bishops writing at the time the sagas were composed seem almost disinterested in the issue of marriage and consent, focusing on the need to reform clerical celibacy, followed only marginally by writings on attempts to restrict the parameters and legality of divorce. Consequently, it is unclear why so many saga writers would have opted to fabricate a collection of stories to promote those issues of church doctrine, principally the issue of consent, that were not at the fore of church reforms in Iceland, rather than tackling issues of divorce and extra-marital affairs, two events that occur frequently but are at times treated rather lightly in the family sagas. The *Grágás*, too, seems to collude in the societal negation of consent in marriage and the ease of acquiring divorce. As mentioned earlier, the *Grágás* does include a small section on Christian Law, which does address consent: "a priest must also hear the woman say, without being forced, that she agrees to marry the man."¹²⁰ However, elsewhere in the betrothal section, the rules stipulating the necessary procedures for a marriage do not mention consent of the bride; in fact, a woman could be charged with outlawry if she tried to prevent a marriage that her father had arranged.¹²¹ It is not until 1429 that we find a case of a woman who was granted a divorce by a bishop on the grounds that

116 Jochens (1980, 1986b, 47).

117 Jochens (1991, 363).

118 The Humanist view tends to view marriage as a communicator of a Christian, moral message, designed to teach medieval society the proper rules of ethical conduct by emphasizing marriage from the vantage point of communal needs, rather than the emotional needs of individuals.

119 Elias (1978); Jaeger (1985).

120 *Grágás* K § 18.

121 Frank (1973, 475–478).

she had been forced by her father to consent to the marriage.¹²² On matters of divorce, both the family and contemporary sagas seem to demonstrate that either a man or a woman could legally instigate a divorce by publicly announcing their intent to separate from a spouse. If the witnesses present found the separation just, the couple was considered immediately divorced, each free to pursue a new marriage. The Christian Law section of the *Grágás* states that a couple seeking a divorce must seek the approval of a bishop, but this does not seem to have been difficult to obtain. *Grágás* K § 204 even urges a couple to appeal to the bishop on grounds of personal incompatibility. While divorce is a common theme in the family sagas, it occurs only four times in the contemporary sagas, suggesting further evidence of the influence of Christian didacticism in the latter.

3.6.4 *Legitimacy and Inheritance in the Sturlunga Period*

As with marriage, the social developments of the 11th and 12th centuries A.D. mirrored changes in laws regulating inheritance and attitudes toward the legitimacy of children. In the settlement period, there were few class restrictions on matrimony.¹²³ There was no restriction, for example, for freemen and free-women marrying slaves; however, the child born to a free mother and a slave father, even if the woman had freed him before marrying him, would not be allowed to inherit land. A child born to a free father and slave mother, as we saw in *Laxdæla saga*, by contrast could inherit land as long as a man admitted parentage.¹²⁴ In the Sturlunga period this flexibility was replaced by a highly rigid system of inheritance that scrutinizes all potential legal claims. An insightful example of these changes can be seen in three chronicles from *Hervarar saga*; each, in different ways, shows trepidation over attitudes of legitimacy and inheritance. The first chronicle relates the life of Hervör, who is told, contrary to what she grew up believing, that she is the daughter of a slave. This news brings her great sorrow. Later in the sagas her life is turned upside down once again when she learns that her father was not a slave, but was in fact a wealthy warrior who had been killed in battle on the island of Sámsey. Hervör goes to Sámsey to claim her rightful inheritance, and there meets and marries a wealthy chief. They have two sons: Angantýr, who is well liked like his father, and Heiðrekr, who is unruly and loved only by his mother.¹²⁵ The saga escalates when Heiðrekr is not invited to an elaborate feast his father is holding

¹²² Jochens (1986a, 144).

¹²³ Jochens (1995, 21).

¹²⁴ Karras (1988, 113).

¹²⁵ Tulinius (1992, 151).

in Angantýr's honor. Heiðrekr decides to show up unannounced to disrupt the festivities by throwing stones at the guests, inadvertently striking his brother in the head with a large stone. Angantýr dies, much to the outrage of his father, who generously spares Heiðrekr's life, but banishes him from his household and deprives him of his inheritance. Later in the sagas, we learn that Heiðrekr has managed to become a chief after his father's death, and that he himself has had two sons: Angantýr, named after his brother and born in wedlock, and Hlöðr, born out of wedlock to a slave mother. After Heiðrekr's death, both brothers lay claim inheritance. Angantýr argues that Hlöðr is entitled to nothing as an illegitimate son, but offers to give him a third of his inheritance; however, Hlöðr demands that he is entitled to half, since he is no less of a son. The brothers are unable to arbitrate their dispute and take to a violent feud that ends with Hlöðr being killed at the hands of his brother.

The three disputes unveiled in *Hervarar saga* share a common thread of disgruntled individuals that "had been denied their birthright because their social status had diminished."¹²⁶ First, the sagas begins with Hervör initially being told she is slave, which can be interpreted as an accusation of her claiming a social position above her station. To be the child of slave carried with it not only social repercussions, but economic ones as well: the child of slave was always deprived of an inheritance.¹²⁷ Hervör's race to Sámsey, however, is more than simply the desire to gain a share of her father's wealth; it is also intended to publicly demonstrate her rightful social position. Second, the tension between Heiðrekr and his elder brother Angantýr reflects concerns over birth order and inheritance rights. Angantýr's father honoring him with a feast, at the exclusion of Heiðrekr, suggests that Angantýr was being groomed by his father for a more prominent social position than his brother. Killing his brother allows Heiðrekr to later become a *goði*, an all too common ploy in aristocratic society. Third, the dispute between Hlöðr and his half-brother Angantýr is a key example of the fate of illegitimate sons who refuse to accept the established inheritance laws found in the *Grágás*, claiming more than they are entitled to: they will bring death to themselves.¹²⁸ Tulinus posits that these tensions are the stirrings of the development of an aristocratic class in Iceland that sought to imitate royal behavior as a means of fulfilling the "needs of those who controlled large regions to ensure that the political unit they ruled over would not be divided into ever smaller parts with each new generation."¹²⁹

¹²⁶ Tulinus (1992, 152).

¹²⁷ *Grágás* K § 118.

¹²⁸ Tulinus (1992, 160).

¹²⁹ *Ibid.*, 159.

These concerns are equally reflected in the staunch control over marriage, as well as over women's economic production of cloth. Taken in concert, the image of medieval Iceland after the 10th century A.D. is that of a society that has become increasingly hierarchical; this change in social structure is matched by changing attitudes towards women and marriage, as their roles became more consigned to the private world of the household.

3.7 Conclusions on Iceland as a Hegemonic Colonial Secondary State

This study argues for a reexamination of the relationship between historians and anthropologists dealing with ancient texts and material culture who aim to identify moments of history and culture processes. My aim has been to show that by framing the debate as a methodological issue, and by addressing the challenges raised, one can begin to grasp a meaningful glimpse of pre-modern societies that have left behind both an archaeological footprint and fragments of textual evidence. The reticence among some saga historians to treat the family and contemporary sagas as distinct representations of historical periods within Iceland need not lead to a consensus that, as the family sagas were written concurrently with the contemporary sagas, both must solely reflect the psyche of 13th- and 14th-century saga writers; nor must we deduce that the presumed contractions found between these two categories of sagas represent the wish fulfillment of a dominated society. By using an anthropological methodology we can begin to move our debates past the fixation on demonstrating either the accuracy or fabrication of the accounts of culture and society described in the family sagas. A discussion on some of the events described in the sagas clearly reveals that these texts can at times contradict or corroborate the archaeological record, but we should not conclude from this disparity that the best course of action is simply to treat these datasets as separate fields of analysis; rather, we should recognize that the contradictions between text and material culture often provide the researcher with new avenues of investigation. The utility of an anthropological approach allows us to accept that we need not nor should not expect these datasets to intersect perfectly; we should instead focus on the points of interplay between the two. The intersection of text and the archaeological record can be an insightful place to situate the past, allowing us to move our research and debates into new and more fertile directions.

This brief survey into the world of the sagas suggests that changes in social status are intimately linked to changes in the economy; however, the sagas are regrettably silent on the specific nature and structure of the political economy

of the earliest phases of settlement as well as those of the 13th century. I will argue in the following chapter that one approach to understanding the economic structure of the society and its potential role in the development of secondary state institutions is to examine land-use trends over time, trends that no doubt reflect patterns similar to those we have observed with marriage practices and the organization of households. I propose that the patterns discerned from this discussion suggest a new avenue of research: trade and household production. In the following chapters I will examine the hypothesis that correlated with the restructuring of households documented in these texts is an intensification of livestock farming in a concerted effort to increase the production of woolen cloth to meet the demands of an international market.

Examining the Economic Dimensions of Early Icelandic Society: A Proposed Methodology for Multiregional Settlement Pattern Analysis

Exchange has always been viewed as an important social phenomenon in medieval Iceland. The act of goods exchanging hands bore implications as much social as economic: the giving and receiving of politically charged items cemented and reified personal alliances.¹ In Iceland these exchanges were likely carried out in highly public arenas, as crucial goods, such livestock and grain, had to be imported from abroad. To trade these items was an advertisement of one's social connections and economic wealth, both of which were necessary to fuel these long-distance exchanges. There is, however, no consensus on precisely how essential exchange was to the Icelandic economy, how frequently exchanges were made, and even how exchanges were carried out. At the root of these debates lie conflicting perspectives over how the economy and social structure of medieval Iceland were organized. While active debates are still waged over the extent of slavery and how chiefly redistribution played out in the economy of early Icelandic society, consensus has been reached that patterns of landscape use formed a highly durable component of the Icelandic economy, remaining relatively unchanged until the industrial era of the 20th century. The well-documented farmstead economy of the 18th century,² characterized by predominately small, self-sufficient subsistence farmers, has therefore been seen as an economic model applicable for Iceland throughout its history. I argue this view needs to be critically reexamined.

Assumptions of a homogenous and static economy stem from a larger research lacunae in Icelandic archaeology, which has tended to focus on the cultural history of settlement, with the perception that since the 18th-century population of the landscape, the organization of farmstead placement has more or less remained in place. The logic behind this historical analogy no doubt rests on the assumption that Iceland's landscape use was predetermined by its *isolated* geographic location and *marginal* environment, and could not have been structured any differently. However, as we have seen in chapters 2 and 3, these views do not hold up against the data from current research, which

¹ Miller (1990).

² Gunnlaugsson (1988).

suggest that the environmental and social marginality of Iceland was a later historical phenomenon³ and does not aptly describe pre-18th-century society. In light of these data, new questions must be asked. As long as new avenues of research remain unexplored, our knowledge of early Icelandic society will remain incomplete.

For my research, I created the Skagafjörður Landscape Project (SLP), which proposes a new focus on multiregional settlement pattern research for Iceland, examining not only site location but also the economic development of landscape use over time. This focus cannot be fulfilled by examining only archaeological data or only documentary records, but requires a comprehensive dataset: a multi-component database that incorporates all available archaeological and documentary evidence. I have designed and compiled a database of this kind for Skagafjörður, which I call the Multiregional Site Registry (MSR). The MSR is the first of its kind for Iceland, and will hopefully generate new perspectives on the early Icelandic economy.

The objective of my fieldwork was to amass and systematize settlement data for Skagafjörður, an environmentally diverse region of northern Iceland and an area that figured largely in the social history of early Iceland (see Table 6). It was in Skagafjörður where some of the highest-ranking noble settlers put down roots; where a vital and active trading harbor (Kolkuós) was established; where the second bishopric (Hólar) was founded; and where the last of the chieftains took a final stand against one another in the civil war that ultimately led to the creation of an Icelandic state. My fieldwork consisted of two main phases of research. In the first phase, I conducted an intensive pedestrian survey⁴ of one valley system in Skagafjörður, the Hjaltadalur and Viðvíkursveit area. Traditional pedestrian survey methods, such as systematic surface collections of artifacts and the identification of features, cannot be used in Skagafjörður, where few archaeological remains from the medieval period are visible on the surface. To overcome these limitations, I designed a systematic surveying methodology that used soil coring techniques borrowed from geological research. In the second phase, I used the data from the archaeological coring survey as a working model to interpret existing settlement data taken from both archaeological and documentary sources. I synthesized all the data into a single, fjord-wide catalog – the Multiregional Site Registry – covering most of

3 A phenomenon that includes social processes that led to the marginalization of laborers to the lands they worked, several outbreaks of the plague, and the environmental catastrophes of the Little Ice Age and the eruption of numerous volcanoes – all of which conspired in an overall decline in agricultural productivity.

4 The results of this survey are discussed in Chapter 5.

TABLE 7 *Geo-cultural regions by environmental type considered in the Skagafjörður Landscape Project*

Region	Environmental category
Austurdalur	Highland
Blönduhlíð	Midland
Borgarsveit	Lowland
Dalsplássi	Midland
Efri byggð	Type D
Fremri byggð	Type A
Gönguskörð	Type D
Hegranes	Lowland
Hjaltadalur	Midland
Höfðaströnd	Type B
Kjálka	Highland
Kolbeinsdalur	Midland
Kvarningsdal	Highland
Langholt	Lowland
Neðri byggð	Type C
Norðurárdal	Highland
Óslandshlíð	Type B
Reykjaströnd	Coastal
Sæmundarhlíð	Type A
Skaga	Type B
Skörð	Type D
Staðarfjöll	Highland
Svatárdalur	Highland
Tungusveit	Midland
Vallhólmi	Lowland
Vesturdalur	Highland
Viðmýrarplássi	Type C
Viðvíkursveit	Type C
Vikutorfa	Lowland

Skagafjörður over a thousand-year period of occupation. To explore multi-regional settlement patterns and landscape development, evidence from the MSR was examined and interpreted using a social network systems approach.⁵ Social network analysis, which aims to examine the possible relationships between any two or more variables within a larger holistic system, is a suitable framework for interpreting settlement pattern data. Social network methodologies, grounded in landscape theory,⁶ go beyond the traditional aims of regional analysis – focused on identifying borders and territories – and instead examine the social processes behind the act of negotiating real political and economic behavior within the natural and built environment. The notion of a system or a landscape provides a method for examining the totality of social action within a fluid, rather than a static space, viewing the natural and the social environments not as contradictory or combative, but as complementary.⁷

The purpose of this chapter is to describe these methods, laying the foundation for generating new avenues of research, and to provide a working model for making interpretations of the data examined in my study, which will be discussed in chapters 5 and 6. It is my hope that these methods can be applied not only to other regions of Iceland, but also to other areas around the world that face similar methodological concerns.

4.1 Settlement Pattern Research in Iceland and Regional Network Analysis

Ever since Gordon Willey's regional analysis survey of the Virú Valley in Peru,⁸ settlement pattern research has become an essential archaeological methodology, often resulting in new and unexpected data. Rather than looking at individual settlement sites in isolation, a regional analysis examines how multiple sites within an extensive geographical area interact with one another, revealing a holistic system that takes into account the economic, political, environmental, and social factors that acted on past societies.⁹ Despite its potential, settlement pattern analysis has, with notable exception, rarely been attempted in Iceland.¹⁰ The reticence to apply a regional approach stems from a lack of

5 The results of the second phase of my research are discussed in Chapter 6.

6 Bender (2006); Massey (2005, 2006); Tilley (1994, 1998).

7 Bender (2002); Ingold (1993).

8 Willey (1953).

9 Kowalewski (2008).

10 Cf. Bolender et al. (2008); Smith and Parsons (1989); Vésteinsson (2001).

extensive archaeological data, problems of site visibility, and a general mistrust of the reliability of the documentary record for pre-14th-century Icelandic society (see chapters 2 and 3). This predicament is not likely to significantly improve any time in the near future. Rather than delay until more extensive archaeological work can be completed, an attempt at a settlement survey can now at the very least begin to point to new questions and new directions of research.

Medieval Iceland was, by and large, an agrarian society; however, we must question whether farmstead organization was always geared towards smallholders and sustainability or whether an agrarian economy could have supported commercial pursuits. That is, we should consider whether the economy of medieval Iceland in the 9th century differed from what it would become by the 14th century once state institutions were firmly in place. Regional settlement pattern analysis is up to this challenge: by examining how site systems interacted with their environment over broad geographic and temporal scales, we can begin to identify changes over time in patterns of land use. For my research, I have used traditional regional analysis methods to examine settlement trends in distinct environmental and resource zones, as well as a nontraditional social network or landscape approach, which incorporates both the archaeological and documentary record. These two complementary methods represent the dialogue between the constraints imposed by the environment and the social restraints that shaped the overall use of the landscape and the nature of the economic structure. This consideration is crucial if we are to understand the economy's role in the development of state institutions in Iceland.

The standard goal of regional analysis is to categorize and examine site location, documenting the borders between sites and cultural territories. Embedded in this approach is the understanding that differences in ecology will be reflected in differences in economic practices. As discussed in Chapter 2, the environment of Iceland is richly diverse, so we should anticipate regional economic differences that conform to resource catchment trends. Resource differentiation in Skagafjörður is shaped by elevation; for example, lowland areas experience warmer temperatures and are more amenable to large-scale agrarian pursuits, while the colder highland areas are made up of drier soils that support uncultivated rangelands suitable for animal grazing. These differences suggest that a diversified economy was possible. Likewise, the environment in Iceland is a highly dynamic agent, constantly changing and redefining the parameters of interaction between the landscape and its inhabitants, creating the potential even within regions for economic change over time.

More innovative aspects of the regional analysis undertaken in this study look to the documentary record for clues to address the social issue of economic organization, integrating this information with archaeological settlement

data. Frands Herschend has argued that saga depictions of the early settlement period suggest that at least two possible economic models were in place during the initial development of the farmstead system in Iceland: the 'Skalagrim Approach' of establishing economically specialized farms that feed into the larger, chiefly centers; and the 'Aud the Deep-Minded (Auðr Djupuðga) Approach' of establishing generalized, self-sufficient farms through initial land claims and later through chiefly land grants given or sold to followers and former slaves.¹¹ These two different approaches recorded in the sagas reflect three economic models¹² that correspond well to three types of secondary state formation models. Examining the economy of Iceland will serve as a proxy for uncovering the broader developments of institutional change in Iceland specifically, and the processes behind secondary state formation not only in the Icelandic case study, but potentially in other cultural situations as well. The three models that will be used against the data presented in chapters 5 and 6 are as follows: the *Autarkic Model (Autonomous Secondary State)*, grounded in historical accounts of landscape organization, environmental constraints, and the concept of a gift economy, argues that state formation is the evolution of autonomous, local complexity; the *Imperial Economy Model (Hegemonic Colonial Secondary State)*, which similarly to the Autarkic Model is shaped by the perception that the economy of Iceland changed very little over time, but differs in that it views the Icelandic economy as driven by the external, imperial market demands of Norway to acquire raw materials, with Norway supplanting state institutions in Iceland; and what I call the Norse Economic Territory (*NET*) *Model (Synergistic Secondary State)*, which argues that the economy of Iceland was capable of diversification and that the confluence of local and international socioeconomic changes over time led to the development of an Icelandic state.

Framing the data within a social network analysis bridges environmental and social approaches and allows us to examine the interplay between local and external variables by treating a society as an open feedback system. A social network is a social structure made of nodes, which can be individuals or whole communities, that are tied by one or more specific types of interdependency such as cultural values, friendship, conflict, or trade.¹³ Social network analysis conceptualizes these social relationships in terms of 'nodes' and 'ties'.¹⁴ Nodes are the individual actors within the networks, and ties are the

11 Frands Herschend (1994).

12 See Chapter 6 for a full treatment of these models.

13 Freeman (2004), 3.

14 Granovetter (1973, 1361).

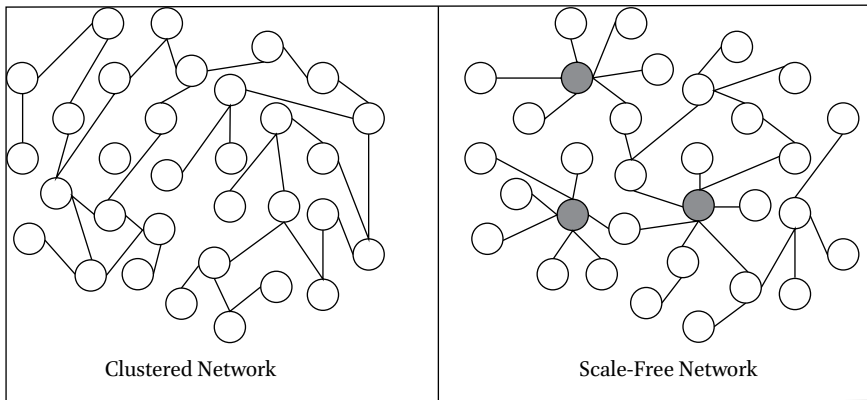


FIGURE 10 *Graph of nodes and hubs comparing the structural difference of a clustered system and a scale-free system (AFTER BUCHANAN 2002)*

relationships between the actors. The resulting graph-based structures or architectures are often very complex,¹⁵ but social network analysis has defined two common network architectures: one built by *clustered* (or random) nodes with occasional random links, the other a *scale-free* structure built by hierarchical nodes (see Figure 10). Both types of network structures are made up of nodes that are tied to one another, but the difference between the two types is the scale of these nodes as well as the strength of the ties that connect these nodes. Clustered structures are made up of nodes that are fairly similar in size and scale, while scale-free structures consist of large-scale hubs tied to smaller nodes.¹⁶ The end result are two highly connected systems, but with different forms of interaction and different degrees of vulnerability.

Clustered networks are susceptible to random failure as all the nodes in the system are equally important. Scale-free networks, on the other hand, are more resilient against random failure since the nodes are hierarchical. Failure in a scale-free network is therefore more predictable since if small nodes collapse, the system will likely continue, but if the hubs or larger nodes collapse or change, the system itself will likely crumble or transform itself into a new system. Hubs themselves can likewise be variable, with certain hubs directing more traffic in the overall system. These busier hubs, referred to as nodal points, are a kind of traffic junction, a place where multiple nodes within a network intersect and convene. This distinction between types of hubs can be useful for analyzing different types of exchange systems in a society as it

¹⁵ Buchanan (2002).

¹⁶ Sindbæk (2007, 62).

provides us with a three-tier hierarchy of sites: first-tier nodal points, second-tier hubs or centers, and smaller third-tier nodes. These different site types within a network are likely to express their relationships with one another differently in settlement pattern trends. In Scandinavia, nodal points are often defined by activities focused around long-distance trade, as opposed to smaller hubs or central places that served as marketplaces where more localized goods were exchanged. These two types of exchange centers were entirely connected, with goods from each flowing through both locales; the difference, however, was the degree of regulation and control over each. Control over nodal points could translate into immense social capital and political clout in a society, and as such these were acutely managed by elites. This task was facilitated in part by geography, as all nodal points in Scandinavia were topographically positioned in areas that could guide traffic into restricted natural corridors, in contrast to more open-access central places that served the local traffic of communication and exchange.¹⁷ The presence or absence of nodal points, therefore, can be determined through settlement pattern data by examining the size of sites as well as their position in the landscape.

The configuration of the network system, and hence of the social organization of the society in question, has crucial implications for the types of dynamics that the system can support.¹⁸ Understanding the architecture of the social system allows us to then understand how changes, such as the development of state institutions, can occur. Under a clustered network architecture, an economy can be dismantled if enough of the nodes collapse or change. In this situation, state institutions are the product of random changes to any of the nodes within the system. These changes are likely to be ones that could affect all nodes fairly evenly, such as changes in the environment or social changes such as conquest. Under a scale-free network architecture, with heterogeneous nodes, changes in the economy are only likely to result if changes occur within the hub sites. Smaller nodes, while vital to the overall system, are not likely to greatly impact the architecture of the system. In this situation, state institutions are the product of targeted changes to the hubs. These changes include any variable that can impact the nature of exchanges orchestrated by hub sites, including but not limited to changes to the political economy of the society. Within a hub system, it matters which nodes are altered.

Autonomous and Hegemonic Secondary State formation models correspond to societies organized by a clustered network structure, characterized by sites operating within a homogenous economy. This type of structure can be

¹⁷ Sindbæk (2006, 128).

¹⁸ Barabási (2003); Buchanan (2002).

readily observed in the archaeological record by the presence of fairly homogeneous sites of similar size and activity. The Synergistic Secondary State formation model, which examines the confluence of local and global variables, corresponds to a scale-free network structure. Scale-free network organization is identifiable by the presence of heterogeneous sites of varying sizes, hierarchical arrangement, specialization, and a diversity of site activities. Settlement pattern trends can readily identify possible hubs and nodes, allowing us to make inferences about the social organization of Iceland and its variation throughout time. Encoded within these settlement trends we find evidence of a developing economic landscape, evidence that will allow us to address the issue of how and why secondary state institutions appear in the 12th century.

4.2 Environmental Setting of Skagafjörður

Skagafjörður is located in northern Iceland and covers an area slightly over 5,500 km². Today the area is well known for its rich environment, distinguished by its fertile soils and an abundance of wild game.¹⁹ The landscape of this fjord system is dramatic and dynamic, characterized by landscapes shaped by the sea, rivers, glaciers, and active volcanoes. The fjord system starts in the north with the sea; moving south, the sea is bounded on either side between the long and narrow Tröllaskagi and Skagi peninsulas before it joins several rivers that take one into the fjord valley itself. The immediate valley is defined by the coastline, as well as by the midland and marshy but habitable lowland landscapes. Further south, the elevation range increases dramatically into the highland areas, characterized by a mountainous, semi-wooded terrain and peaks that reach 1,000 meters above sea level (masl). The fjord system culminates at the glacier Hofsjökull, an active central volcano with an ice-filled caldera and a summit reaching over 1,800 masl.²⁰

Skagafjörður is further defined both geographically and culturally by a number of small valleys and surrounding areas (see Figure 11). The survey presented here will include twenty-nine of these regions²¹ that can be characterized over-

19 It is estimated that arable lands make up about 1,200 km² of Skagafjörður, which is a high ratio of arable to non-arable lands by Iceland standards. This figure does not include uncultivated grazing areas.

20 Björnsson (1988); Hjartarson and Hafstað (1999).

21 The northern half of the Tröllaskagi and Skagi peninsulas are not included in this study. Little archaeological work has been done in these areas. While there is documentary evidence for these areas, this bias in dataset merits its exclusion.



FIGURE 11 Map of the research area showing the geographic extent (in yellow) of Skagafjörður

all as conforming to either predominately coastal, lowland, midland, or highland areas, or as diversified regions with a combination of ecological areas. While most regions in this survey can be classified as strictly highland, midland, or lowland, there are some regions in Skagafjörður can be classified as having a mosaic of elevation zones. All of these regions can typically conform to one of four possible environmental types. Type A regions are made up of a combination of highland, midland, and lowland locales. Type B regions consist of coastal and lowland locales. Type C regions contain lowland and midland locations. Type D regions are comprised of highland and midland settings. As Skagafjörður²² has a wide range of environmental categories, it is an ideal location to examine the interplay of the environment, the economy, and the development of state institutions. One of the research goals of my project is to investigate observable differences in site formation, site type, and site size among and within these environmental classes.

22 The regions in Skagafjörður surveyed here are well represented with one coastal region, seven highland areas, five lowland regions, five midland areas, two Type A areas, three Type B regions, three Type C regions, and three Type D locales.

4.3 Research Methodology

My research methodology was designed to test whether the economy of Iceland during the pre-state period reflects a clustered or scale-free network system and to examine whether there were any regional differences to the system correlated to environmental conditions. My hypothesis is that settlement distribution in pre-state Iceland was highly dynamic, reflecting a hub system that changed over time alongside a developing local and global economy. These changes to the economic system resulted in changes in the sociopolitical structure, and ultimately the creation of an Icelandic state. To test this hypothesis, I have designed a project that applies regional analysis methodologies, conducting a multiregional examination of site development through primary archaeological fieldwork and with the compilation of a site database for all of Skagafjörður. The Multiregional Site Registry (MSR) is the product of this research, with all sites systematically cataloged by shared, explicitly defined attribute categories.

4.3.1 *Compiling the Multiregional Site Registry*

The MSR was designed to systematize and interpolate new and existing data to trace broad interregional patterns of land use over time in the coastal, lowland, midland, and highland areas of Skagafjörður. This project requires a multidisciplinary approach, drawing data from archaeological, geological, and documentary research. This compilation has depended on the collaboration of numerous research studies currently underway in Skagafjörður, including a number of archaeological projects and site surveying programs²³ that have made my research feasible. The archaeological data presented here is my

23 These projects include: Byggðasafn Skagfirðinga (Zöega 2003, 2004, 2005; Zöega and Zöega 2004, 2007), which completed extensive surveys, test excavations, full site excavations, and bioarchaeological research with the goal of both documenting the history of Skagafjörður and understanding the lifeways of medieval Icelanders; the Skagafjörður Archaeological Settlement Survey (Steinberg 2002, 2003, 2004a, 2004b, 2005; Steinberg and Bolender 2004, 2005; Bolender et al. 2008), which has focused its attention in Langholt, applying innovative remote-sensing techniques coupled with small- and large-scale excavations to address the issue of state formation and the development of private property in Iceland; the Hólar Project (Traustadóttir 2002, 2003, 2004, 2005), which has focused mostly in Hjaltadalur and Viðvíkuresveit with the large-scale excavations at the bishopric at Hólar and the trading harbor at Kolkuós to investigate how the church came to be the largest landholder and economic powerhouse in Iceland; and lastly the massive amount of work done by Hjalti Pálsson, a local historian and archaeology enthusiast. Pálsson has published four large volumes (Pálsson 1999, 2001, 2004, 2007) to date on

synthesis of years of research undertaken by these projects, my primary archaeological and survey investigations, and the compilation of all available primary documents that span predominately from the 11th century through the 19th century. My methodological aim was to apply this synthesis of data into a single working GIS database, with all sites arranged by a type category (*activity area, assembly sites, farmstead, harbor and trading centers, pagan graves, and sel sites*); by geographical location (*highland, midland, lowland, or coastal*); by time period (*Settlement, Early Medieval, Sturlunga, Late Medieval, Early Historic, and Historic*); and by their tax value, used here as a proxy for size (*site type categories 1–4*). The result is a fairly conservative but comprehensive regional database of 610 sites that span a period of over a thousand years. The data presented here, cautiously used, can provide new insights on patterns of land use that can be further investigated.

4.3.2 *Site Types*

A regional analysis program in Iceland is mainly a matter of identifying farmstead sites. The key features of an Icelandic farmstead include: a domesticated residence, a number of small outbuildings (such as barns, stables, and workshops), homefields (land surrounding the homestead which were intensively cultivated) for growing grass to make into hay fodder, and unintensified surrounding hills and fields for grazing livestock. In addition to these features, midden deposits and mounds are frequently observable. All sites analyzed were therefore indexed by one of nine site types: activity area, assembly site, four classes of farmsteads defined by their size, harbor and trading centers, pagan graves, and sel sites. Site types can be defined and identified archaeologically as follows:

Farmstead (Site Types 1–4): While farmsteads vary in size, location, and even in the layout and construction of the site, they share in common domestic residence. Farmstead sites are characterized as places of permanent households and demonstrate typical household activities, such as cooking, dairy production, smokehouses, sewing, ironworking, and sleeping and storage areas. These sites typically have associated middens, a feature entirely absent from activities areas.

Households, outbuildings (barns, pens, and workshops), and cultivated fields for grass production are all common components of Icelandic farmsteads; all leave behind a material signature that can be identified through coring and targeted test trench excavations. The longhouse, a narrow, oval-shaped,

farmsteads throughout Skagafjörður, often working very closely with Byggðasafn Skagafjarðinga and consulting available documentary records.

single-roomed structure built with turf and stone, was the typical domestic residence in the earliest periods. The size of the longhouse often corresponds to the overall wealth of the farmstead, as it is an indication of how many individuals the farmstead was able to support. Longhouses therefore vary in size, measuring as little as 10 m in length to as much as 30 m in length.²⁴ Household plans evolve over time to include multiple rooms, eventually giving way to rectangular and square-shaped structures rather than oval-shaped. Outbuildings were likewise built with a combination of turf and stone and have distinctive plans, features, and sizes. Lastly, cultivated fields have a discernable soil morphology that differs markedly in its composition and sequence from natural soil horizons, making these areas identifiable in a coring survey.

I have identified four different sizes²⁵ of farmstead sites: very large (type 1), large (type 2), mid-size (type 3) and small to very small (type 4).

Activity Area (Site Type 5): A land use site, but not a place of permanent domestic occupation. The types of activities conducted at the site range from craft specialization, especially ironworking, to places of seasonal or year-round animal boarding. These sites often yield little to no domestic materials associated with households, but are frequently characterized by specialized structures, such as a workshop or a feature for boarding or penning animals. These sites are associated with farmsteads sometimes located within a kilometer of the site, other times located several kilometers away. Also included in the category of activity are pagan graves. While a number of farmstead sites contain pagan graves, there are a handful of isolated burial sites that appear to be located some distance away from known farmsteads. It is difficult to declare with any certainty which households the individuals contained in these interments belonged to, but it is important to note their presence as they represent a pre-Christian type of land use.

Sel (Site Type 6): 'Sel' is the Icelandic word for *shieling* or *sheal*, derived from the word 'shelter' and used to describe a temporary shepherd's hut or small cottage. A sel is typically used only in the summer and commonly designed to house a shepherd and his sheep, and sometimes cattle. Ethnographic evidence from Icelandic farmsteads in the 19th century report that one common method for reducing the economic burden of relying on stored hay year round was to herd their livestock into common lands outside of the immediate farmstead. Here in these outlying wild rangelands, which were always communally owned,

24 It has been estimated that Stöng, a 28-meter (92 feet) long, well-preserved longhouse in the south, could have supported as many as twenty people (Dugmore et al. 2007; Magnusson 2005, 146).

25 Please see the discussion below on tax value and farm size.

animals could freely graze. These rangelands are often located within fairly close proximity to the farmstead but are sometimes located tens of kilometers away in the highland reaches. Documentary evidence dating as far back as the 15th century suggests that a sel had to be located within the boundary of an individual's land claim, but these boundaries could lie well beyond the farmstead. The practice was definitively in use by the time of the 13th century as sel are mentioned in the *Grágás*, but is believed to be a much older practice as there is growing evidence that the strategy of including sel sites as part of a farmstead economy was widely practiced in the Norwegian homeland well before the time of Icelandic settlement.²⁶ Unlike activity areas, sel may contain a low level of domestic debris, as it was common for herders to stay with their flocks for at least part of the summer months. Milking was also typically performed within the sel and was processed into butter and yogurt on site. These activities could require several people, both men and women, to stay at the sel for part of the summer. Typically sel sites contain two to four structures, not very large in size, commonly as small as 2 m in length but sometimes measuring over 10 m in length. The identification of sel sites is therefore not always clear; they have been frequently mistaken for small farmsteads given the presence of domestic materials, especially fireplaces – hence the conservative number of sel presented here.

Harbor and Trading Places (Site Type 7): These are sites are characterized by the presence of seasonally used booths. The term 'booth' is used to imply that these structures were served as both a temporary shelter and also as 'stores' in the marketplace where a merchant might prepare or house some of the goods intended for sale. The booths can be either circular or oblong in shape with low walls made of turf, and were roofed by tents. These sites contain domestic debris, including the refuse from cooking and from ironworking, presumably used to make minor repairs to ships. Rarer finds include silver coins and scales – the telltale material indicators of mercantilism – along with foreign ceramics, combs, and goods made of non-local iron.

Pagan Graves (Site Type 8): Pre-Christian (before 1000 A.D.), usually single-interment burials associated with a range of Viking Age artifacts, such as beads, blades, trading scales, and whetstones. Pagan burial features are typically located some distance away from domestic farmstead sites and are often positioned overlooking the sea or a river. These types of burial features terminate shortly after 1000 A.D. and are replaced by family church cemeteries. Pagan graves are therefore a good indication of early land use.

26 Sveinbjarnadóttir (1991).

Assembly Sites (Site Type 9): Meeting place of the local Quarter Assemblies established shortly after 930 A.D. with the creation of the annual Alþing Court (see Chapter 1). These local assembly or court sites were devoted to the legal affairs of each quarter and met whenever a case needed to be heard. These sites likely also served as local meeting places in the community, and were most likely regulated by the authority of the office of the chieftaincy.

4.3.3 *Site Location*

In addition to site location referenced by geographical ISNET (Icelandic grid system) coordinates, all sites were further coded by their elevation. As discussed above, ecological zones in Iceland are defined by elevation: highland, midland, lowland, and coastal. The *highlands* are culturally defined in this survey as those areas 200 or more masl; the *midlands* are between 100 and 200 masl; the *lowlands* are located between 0 and 99 masl; while the *coasts* are located along the shoreline. These elevation categories have been delineated by the limits of agricultural production; sites above 200 masl are rarely encountered. All sites registered were assigned a location category based on their elevation. It is therefore possible to have sites with different location categories all within the same culturally defined valley. This differentiation permitted a settlement pattern analysis that considered both social and environmental geographic references.

4.3.4 *Time Periods and Dating*

All sites were cataloged by their initial period of occupation, by intermediate periods of abandonment, and by the final period of their occupation. Since sites frequently change their function over time – e.g., a farmstead might later become a sel – a site might have multiple types corresponding to different time periods. For the purposes of this study I have divided early Icelandic history, culminating in state formation, into three phases: the *Settlement period* (874 to 1000), the *Early Medieval period* (1000 to 1104), and the *Sturlunga period* (1104 to 1300). Although my research concerns are focused on the pre-state period, it is useful to compare the economic and sociopolitical structure with that of later time periods when state institutions were in full bloom. I have subdivided the time between 1300 and 1900 into an additional three periods, each defined by key cultural events: the *Late Medieval period* (1300–1600), when Iceland's two bishoprics were the wealthiest landowners; the *Early Historic period* (1600–1800), defined by a decline in ecclesiastical power and devastating climatic catastrophes; and the *Historic period* (1800–1900), when the northern bishopric had been dissolved and land was once again alienable to a larger majority of the population. After 1900, Skagafjörður is no longer a

rural landscape, as fishing towns and summer homes were introduced, changing the economic make-up of the region. For this reason, my analysis does not consider the last hundred or so years of land use in Iceland.

Because my research depended on my ability to track changes over time, having a reliable means of dating sites was essential. Dating of sites was accomplished through both documentary sources and, for the intensive primary survey, relative dating using tephrochronology.²⁷ Tephrochronology is the dating of tephra (volcanic ash) layers deposited on the surface following an eruption, found as distinct strata in archaeological contexts. There are numerous volcanoes in Iceland, each with a unique chemical signature, making it easy to distinguish different source volcanoes as well as different eruptions by the same volcano. Tephra layers can be dated by establishing a correlation between a layer and a reference to an eruptions found in the written sources; spectrum and chemical analyses can determine the source of the tephra, allowing us to “confirm that a layer from a particular volcano was firmly connected to the written record of its eruption in a particular year.”²⁸ In Skagafjörður we are primarily concerned with tephra from the volcano Veidivötn-Dyngjuháls for the earliest periods of human settlement (the Settlement period corresponds to the 874 and 1000 eruptions) and the Hekla Volcano for the medieval periods (the Early Medieval period corresponds to the Hekla 1104 eruption, and the Sturlunga period corresponds to the Hekla 1300 eruption). For the post-1300 time periods, we can use a combination of tephra and textual dating, using the Hekla 1766 eruption as an upper boundary strata in archaeological profiles.

4.3.5 *Tax Value and Farmstead Size*

In this study, all farms were assigned one of four size categories: very large (type 1), large to medium (type 2), medium to small (type 3), and very small (type 4). The size of the farm was not determined by a standard measurement of geographic space, say in hectares as is normally done in most regional analyses, but was instead determined by its overall economic productivity, a measure revealed by its tax value. Data are available for the boundary dimensions, measured in hectares, for some farmstead sites, but in many cases this number tells us little of the actual size of the household or wealth of the site, often proving that in Iceland bigger is not necessarily better. Knowing the borders between sites reveals little of the economic and social dynamics. Taking cues from landscape theory, what is needed to examine these dynamics is a method for measuring determinate variables for landscape productivity. For Iceland,

²⁷ Þórarinnsson (1980).

²⁸ Vilhjálmsson (1991, 98).

these variables would include the availability of resources within a land claim and the agricultural productivity of the soil, neither of which are necessarily correlated by hectare size. The size of the domestic residence is a good candidate as a proxy for the overall wealth and productivity of the farm, but unfortunately only a handful of sites have been excavated in Skagafjörður. In the future, geomorphologic studies and additional household excavations will better enable us to assign productivity values. For the purposes of this study, land registries, beginning in the 13th century and culminating in the 19th century, have been taken as an indication of the wealth of a household, as they document the amount each farmer could afford to pay in taxes and, therefore, the overall productivity and size of the farmstead. Where household data are available, the size of the domestic structure and the tax value of the farm are evenly matched,²⁹ indicating that the tax value is an indication of the potential size of the farmstead. This system is by no means without flaw, but can at least be tested and replicated and can begin to provide a means for assigning size distinctions between site types.

The tax value of a site can be found in a number of documentary sources, including census records, land and tax registries commissioned by the Danish Crown and by the Hólar Bishopric, and property claims documented in legal records. In compiling the MSR, I relied heavily on the most complete land census and tax registry, the *Jarðatal* Johnsen. This registry was undertaken between 1847 and 1849 at the behest of the Danish Crown, which dispatched Jón Johnsen to Iceland to conduct an extensive household census. Johnsen frequently included in his census the history of a farmstead, including the presence of older ruins still visible on the farm and the social memory of the families that once occupied those lost structures. In addition, Johnsen made frequent reference to older documents that mentioned the farmstead, allowing to us to make comparisons of the past and present value of the land. Johnsen gave each working farm a number³⁰ and a tax value measured in 'long hundreds', a Danish monetary system based on pieces of silver. According to Johnsen's notes, the farms with no value listed at all are those that are less than one hundredth. Farm values range from 0 to 100 hundredths. *Small farms (type 4)* are defined as those whose value is between 0 and 19 hundredths; *midsized farms*

29 For example, the longhouse at Glaumbær is valued at 40 hundredth (a high tax value) and its early medieval longhouse is quite large, measuring 29 meters in length (Steinberg 2003).

30 It is not uncommon for one area to have multiple sites with the same name, making it difficult to distinguish them in the documents. The Johnsen number has eased much of this confusion, giving us an alternate means of identifying a farmstead in the documentary records.

(*type 3*) are defined as those valued between 20 and 39 hundredths; *large farms* (*type 2*) are valued at 40 to 59 hundredths; and *very large farms* (*type 1*) at 60 or more hundredths.

Older registries were also included in the MRS, such as the *Jarðabók* and several census registries from the Hólar Bishopric. The *Jarðabók* was carried out under the direction of the Danish Crown in the early 18th century at the request of Icelanders who felt they paid too much in taxes and received too little in return. Two commissioners, Árni Magnússon – an Icelandic educated in Denmark – and Páll Vídalín, were sent to Iceland to carry out a full investigation on the Danish colony's standard of living. This investigation, twelve years in the making, resulted in the *Jarðabók*, a land registry that documented the names of landowners, the number of farms they owned, how much they owed and how they paid for their land taxes,³¹ and sometimes even a list of every possession a family owned. Like the *Jarðatal Johnsen*, the *Jarðabók* measured the value of the farm in long hundreds, making the two sources easily comparable.

The church records are more difficult to reconcile, but they too, were included in the MSR. Churches and the Hólar Bishopric made attempts to assign a value to farmsteads they did not own outright, with the expressed purpose of consigning appropriate tithing taxes. Included in the MSR are four principal documents: 1318 Máldaginn, 1388 Máldaginn, 1449 Hólastóll, and the 1550 Sigurðarregistr, which can be found in the *Diplomatarium Islandicum*.³²

31 While taxes were determined by a monetary value, they were frequently paid in kind with goods such as butter, hay, or livestock.

32 The organization and compilation of the *Diplomatarium Islandicum* is credited to Árni Magnússon (1663–1730), who was born in Iceland but educated in Denmark. In 1701 he became a professor of Danish antiquities in Copenhagen, where he made it his life's task to "save what was still extant of the literary treasures of his country" (Nordal 1975, 369). Magnússon is said to have traveled around Iceland for ten years, collecting and buying manuscripts. When unable to convince someone to give him a text or allow him to purchase it, Magnússon would copy the document by hand. While most collectors were only interested in handsome, beautifully bound and illustrated books, Magnússon collected everything, from whole books to scraps and fragments. There is some suggestion that Magnússon would even interview farmers about the history of their land, which he then recorded in his extensive notes. By 1720, Magnússon had shipped back to Copenhagen 55 large crates of manuscripts from Iceland. Amazingly, this was probably not the entirety of his collection, as some of the material is believed to have been lost at sea in a shipwreck (Nordal 1975, 368). Even after he returned to Denmark, Magnússon continued to collect Icelandic texts, amassing an enormous, priceless collection; however, Magnússon seems to have been unable to put together these texts, and therefore published very little of what he found. To make matters worse, the fire that leveled most of Copenhagen in 1728 destroyed a great deal of Magnússon's collection. Popular stories describe Magnússon

The *Diplomatarium Islandicum* contains a collection of economic documents, legal judgments, contracts, and church inventories from the earliest periods of writing up to about 1570 A.D.³³ These documents were compiled by separate bishops at Hólar; while each document has its own style, all typically indicate the value of the farm by the number of cows the farm could accommodate. After careful calculations and cross-referencing, Björn Teitsson has suggested that one cow is roughly equivalent to one hundredth, allowing us to convert cow values into long hundred values³⁴ assigning early farms to a size category that is comparable to the tax system used to assign the size for later farms.

The value and size of the farms recorded here are a conservative evaluation and are based on all available sources of data, textual as well as archaeological. I stress here that this is a working model to further tested and replicated by future research. Having assigned these categories here, however, allows us to begin to unravel the history and use of the landscape.

Four additional categories were included in the MSR: *sel sites* (type 5), *activity area sites* (type 6), *harbor sites* (type 7), *pagan grave sites* (type 8), and *assembly sites* (type 9). These are sites that have no tax value and are treated as categories separate from the settlement placement analysis for households. They are included in this study because these sites are part of the overall economic system of Iceland, and were sites that households interacted with. Unlike the assignment of the number 1–4 for farmsteads, the assignment of the numbers 5–9 to specific site types was arbitrary. Size 7 sites are not necessarily smaller or larger than size 5 sites, but the same categorization was used for consistency within the registry. This consistency makes searching the registry more efficient and mapping the site types by number easier to trace.

4.4 Intensive Survey of Hjaltadalur and Viðvíkursveit

As a source for analogy and extrapolation of the pan-regional dataset, I conducted a systematic intensive archaeological survey of the Hjaltadalur-Viðvíkursveit valley system. The goal of the Hjaltadalur and Viðvíkursveit

carrying out of the city as many boxes as he could, but remained powerless to save them all, stating with great sadness, “here go writings nowhere to be found in the whole wide world” (Karlsson 2000, 159). While Magnússon published very little of his work, his major contribution to the field of Norse history was amassing hundreds of thousands of documents that have formed the basis of subsequent textual research in Iceland.

33 Byock (1988, 19).

34 Teitsson (2006, 463).

survey was to date already known medieval farmstead sites and to possibly locate unknown structures and activity areas that have not been documented. The same suite of categories found in the MSR (site type, location, time period, and size), were used to cataloged sites identified in the intensive survey.

These objectives, however, were met with a methodological challenge. Unlike many other regions of the world, traditional pedestrian surveying alone cannot be applied in Iceland when attempting to locate the earliest occupations of a farmstead. Conventional surveying typically entails identifying the remains of visible structures and artifacts³⁵ on the surface, but in Iceland neither of these datasets are consistently available. There are rarely artifact scatters and the deep grassy landscape makes it nearly impossible to visually detect surface features, if they are present at all. Likewise, because structures are built out of organic turf (sod), which decays and breaks down within a hundred years after construction,³⁶ there are few standing structures exposed on the surface that date earlier than the 19th century (see Figure 12). Lastly, medieval farmsteads in lower elevations are today deeply buried beneath 1 to 2 m of aeolian silt. Surveying in Iceland, therefore, must be done beneath the surface.

There are a few methodologies that can meet these requirements, with Ground Penetrating Radar (GPR) and soil coring proven to be the most successful.³⁷ The Skagafjörður Archaeological Settlement Survey³⁸ (SASS) has created a highly sophisticated suite of GPR techniques suited to the challenges of Icelandic archaeology. By applying a mixture of broad-resolution conductivity and high-resolution GPR Slice imaging, the SASS Project has since 2001 uncovered at least two previously unknown, major settlement-era farmsteads, along with a number of other early medieval structures at multiple locations (Steinberg 2005). The drawbacks to this approach are the expensiveness of the equipment and the extensive knowledge in geophysics required for proper interpretations of the data.³⁹ For my research purposes, GPR was not the

35 Ceramic scatters are a common feature in most regional analysis projects, but ceramics are a rare find in Iceland. Icelandic clays are resistant to firing, so most households used other materials for making storage containers and tableware. The most common material was wood, a nondurable item in most archaeological contexts. When ceramics are found, they are always imported and are typically a good indication that the household was wealthy enough to purchase these foreign items.

36 Sigurðardóttir (2008).

37 French (2003); Garrison (2003).

38 SASS is directed by John Steinberg (UMASS Boston).

39 While the results of GPR are phenomenal, the process is painstakingly time-consuming. Mapping each farmstead can take, at the very least, a month, frequently requiring

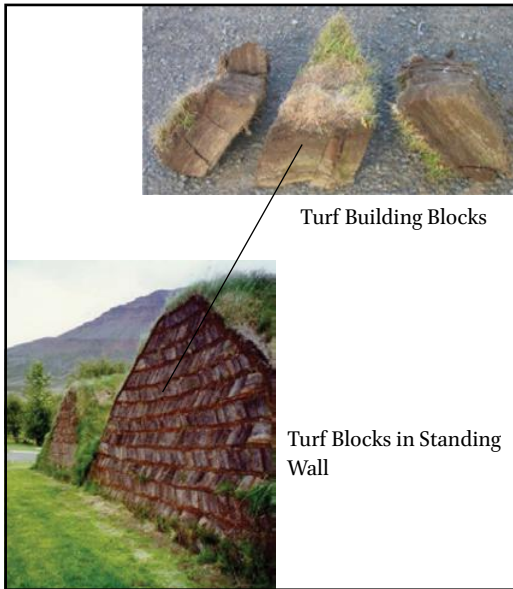


FIGURE 12 *Turf 'brick' or 'block' construction*

solution. I instead chose to use soil coring, which could be applied to gather an extensive dataset covering multiple farmsteads in a few field seasons, rather than an intensive dataset gathered by examining one or two sites per season.

Coring is a technique developed by geologists to collect soil samples for analysis⁴⁰ but can be applied by archaeologists to collect profile data across a site (French 2003), with each core exposing a 3 x 40–116 cm area.⁴¹ Coring is similar to test excavations, but is far less intrusive; each core exposes an area small enough to be fairly non-destructive to archaeological material,⁴² but large enough to clearly document intact evidence of cultural material such as charcoal, turf, or bone, as well as tephra layers for dating cultural occupations (see Figure 13). Likewise, data from coring also serve as a tool for assessing the overall preservation of sites – natural processes like erosion and landslides, as

multiple field seasons for the fact that once the data are interpreted, the site must still be ground-truthed through either test excavations or, as the SASS Project has advocated, through large surface excavations that expose the uppermost levels of the site.

40 Buol et al. (1980).

41 The size of the core depends on the size of the sampling tube and the length of the extension rod. My survey was conducted with a JMC Sampling core, using an extension rod that reached 116 cm below the surface with a large sampling tube 3 cm in diameter and 40 cm in length.

42 Goldberg et al. (1999); Holliday (1992).

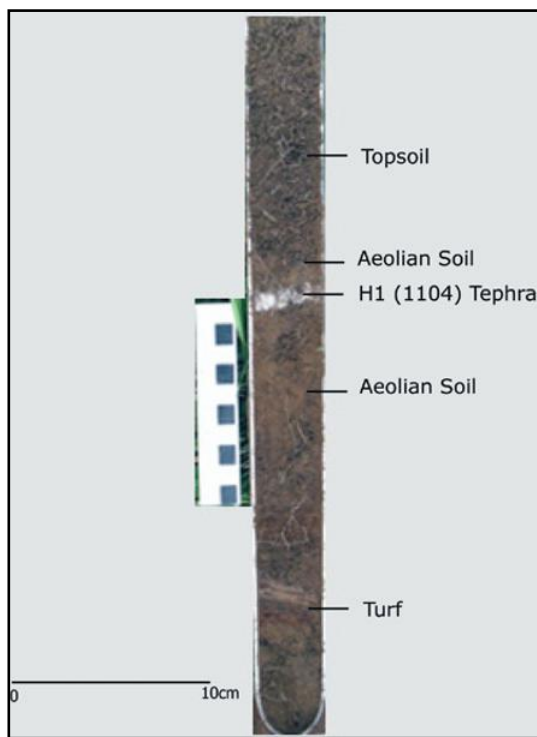


FIGURE 13 *Profile of a core*

well as human activities such as plowing, produce distinct and identifiable markers.⁴³ Lastly, coring data can also be applied for generating environmental reconstructions of the landscape, documenting broad processes of erosion, soil deposition, deforestation, and the draining or reclaiming of wetland areas.

4.4.1 *Sampling Strategy*

The first phase of the coring project comprised a broad survey of farms, consisting of 10 m spaced walkovers and interviews with farmers. At this point, some areas can be omitted from the survey if, for example, tracts of land have been heavily bulldozed or plowed. This still, however, leaves very large areas to cover. While modern farms vary in size, an average farm is roughly two to three hectares, with a number of farms larger than three hectares when their meadows are included. Coring grids were mapped using ISNET⁴⁴ datum points, the

⁴³ Keeley (1981).

⁴⁴ ISNET coordinates can be easily converted to UTM points when comparing data with older existing maps.

geographic grid system used by other archaeological surveys in Iceland, to facilitate future comparisons across sites. ISNET points were taken in the field using a handheld GPS.

The second phase of the project was to systematically take soil cores from areas defined as suitable for investigation in phase one. All surveys began by taking soil cores every 20 m across a site. The soil cores were categorized as either natural features or as cultural material, with each category leading to two distinct sampling strategies.

The most crucial element of a natural feature is the moisture of the soil. Extensive wetland areas are common in Hjaltadalur, but in many cases these wetland areas have been drained using heavy machinery over the last fifty years of agricultural-technological revolution in Iceland. Former wetland areas are not always easy to detect on the surface, but they have distinct signatures in a core profile. If former wetland areas were detected, then the sampling strategy was to take a core every 50 or 100 m, depending on the size of the farm, to map out the extent of these formerly marshy areas. It is likely that these areas were not desirable locations for households in the medieval period, but could have served as areas for turf collection and sometimes as grazing areas; even today it is not uncommon to graze cattle in marshy areas, but deep bogs would have been avoided. If the core profile uncovered dry soils for the medieval period, coring every 20 m continued as these areas would have been the most likely occupied.

If cultural material was detected, the grid was tightened first to every 5 m to map out the extent of the feature, and was then refined to a one-meter grid to uncover information on the specific characteristics of the feature. When possible, interpretations were made of these features, placing the finds within one of two categories: structural features that include households as well as secondary outhouses or animal structures; or activity areas such as ironworking or charcoal-making locations. The goal was to then date these materials by means of situating the material within tephra horizons (see below) and if necessary estimating the time of deposition by calculating rates of soil accumulation. Samples for radiocarbon dating were likewise taken in a few sites. The benefit of this approach was that it permitted a full diachronic vertical sample of the site's household activities in a reasonable amount of research time.

Tephrochronology was used to date sites identified in the intensive survey. Skagafjörður is an ideal location in Iceland to use tephrochronology as a relative dating tool, not only because tephra layers are easily distinguishable and have been thoroughly calibrated with radiocarbon dates, but also because the relevant historical tephra layers found in Skagafjörður coincide with important social events (see Table 8). These volcanic lenses are easily identifiable, as each

TABLE 8 *Tephra sequence in Skagafjörður*

Date (A.D.)	Tephra/Volcanic source	Thickness	Color	Social Event
871 ± 2	Landnám	>0.5 cm	Green	Early Settlement
1000	Veiðivötn-Dyngjuháls	0.5 cm	Blue	Conversion; changes to the political economy
1104	Hekla 1	1 cm	Yellow-White	Tithe; start of the Sturlunga period
1300	Hekla	>1 cm	Red-Black	State Institutions
1766	Hekla	>0.5 cm	Black	Decline in farming

tephra deposit has discernable physical properties, such as color and texture, permitting a robust control over the chronology of stratigraphic layers found in both core and excavation profiles.⁴⁵ Knowing the date of each tephra layer, one can the date the deposition of cultural material between tephra layers, allowing one to track changes in economic activities documented across sites.

The third phase of my research was to conduct limited test excavations to better identify the nature of complex structures and to reveal more information on the types of activities carried out in medieval household production. My strategy was to target areas of dense, well-stratified middens or structures, as indicated from the coring survey. Test soundings all began as one-meter units, with the possibility of expansion if architectural features were encountered. Test trenches in structural features were excavated in single context units, while midden features were excavated following either the cultural stratigraphy if tephra layers were present, or in arbitrary 10 cm intervals to control for temporal changes.⁴⁶

45 Vihjálmsón (1991).

46 The results of this survey are discussed in Chapter 5.

4.5 Conclusion

Limited archaeological data, concerns over the historicity of the early documentary record, and a perceived lasting marginality of the society and the landscape have all contributed to a reticence to examine broad-scale economic trends for early medieval Iceland. I have proposed three economic models (The Autarkic Model, the Imperial Economy Model, and the NET Model), that can be examined through a social network approach by identifying the structure of the economy as conforming to either a clustered network (homogenous economy) or a scale-free network (diversified economy). To collect data for this research, I have proposed an interdisciplinary, pan-regional methodology to identify trends in landscape organization through settlement pattern analysis. A settlement pattern approach can examine the possible relationship between environmental constraints and site location and the potential exchanges between sites within a larger regional system, allowing me to address questions on the economic nature of early Icelandic society. I argue that understanding the nature of these relationships will not only broaden our understanding of how and why Iceland was settled, but also how and why state institutions developed there, succeeding a society that had been organized by chiefly arrangements for the subsequent two hundred years after the initial colonization. In the following two chapters, I will examine the data collected from my intensive survey of Hjaltadalur and Viðvíkursvjet and multiregional settlement patterns in Skagafjörður using evidence from the MSR. I propose that examining land use trends over time through settlement pattern research and a social network systems approach reveals new insights on the social organization of early medieval Iceland, and suggests a more heterogeneous and diversified economy than had previously been considered. Changes in the economic configurations of the society, I will posit, factored prominently in the development of secondary state institutions, a trend that can likely be seen in the development of other secondary states in the pre-modern as well as the modern world.

The Archaeological Survey of Hjaltadalur and Viðvíkursveit

As there is nothing else to suggest otherwise, it is taken for granted that the distribution of settlement had by the 11th century reached a stage as we know it from later centuries and that subsistence patterns were not radically different from what is observable in later times.¹

Previous models of the transition from chieftdom to state in medieval Iceland share the view that the economic structure of the society underwent few changes from the time of settlement until urbanism developed in the 20th century. This view, highlighted by Vésteinsson, has been reinforced by extrapolations from tax and census records from the 14th through 19th century, which clearly document a system of landscape organization centered on pastoral-agrarian pursuits that were managed by small households. This assumption has rarely been challenged, limiting debates on state formation to discussions that privilege the idea that Iceland was always organized around a restricted farmstead economy, leaving little room for the discussion of alternate potential economic configurations. The likely candidates for non-agrarian economic activity, such as craft production, were nondurable, leaving behind in the material record only faint traces of the acts of production, exchange, and consumption; in response, most scholars assume either that non-agrarian pursuits played a minimal role in Icelandic society, or that their extent is entirely unknowable to archaeologists, and hence do not figure in the discussion. This narrow focus, understandable given the constraints of the available dataset, should nonetheless raise scientific alarm, especially when we consider that Iceland was settled during the Viking Age, an era characterized by trade and travel. What we lack, however, is not a more straightforward material signature of economic activity, but an understanding of how the landscape was organized, from the time of settlement through the 13th century when state-level institutions take root. I will argue here that examining the structure of an economic system through social network analysis of data from settlement pattern trends can provide a means of examining potential economic activities that range from household sustainability to interregional exchange networks.

¹ Vésteinsson (2000a, 12).

To test this hypothesis, I designed the Skagafjörður Landscape Project (SLP) with the aim of mapping the evolution of landscape use in northern Iceland from the 9th through the early 19th century (see also Chapter 4). In this chapter I will examine settlement pattern data from my primary archaeological survey of one valley system in Skagafjörður, Hjaltadalur, and the surrounding area of Viðvíkursveit to determine whether the economies of the sites in this valley were structured around a clustered or a scale-free network. By tracking the development of landscape organization over the long term across a broad region, we can begin to decipher the configuration of the political economy in northern Iceland during the pre-state period, a time for which we have only limited archaeological and textual evidence. Knowledge of how the economy was structured and how relationships were defined between sites will provide us with clues about the process of secondary state formation in Iceland.

5.1 Environmental Setting of the Research Area: Hjaltadalur and Viðvíkursveit

Hjaltadalur and Viðvíkursveit make up a roughly 100 km² valley system² located on the eastern side of Skagafjörður, within a fertile, erosion-resistant zone protected by several large mountain ranges. Together these two areas form one complete fjord valley system that begins at the seacoast and ends in the highlands. The designation of two names for this valley conforms more to culturally-defined boundaries than to geological ones, with Viðvíkursveit beginning at the coast and ending inland at the boundary between the farms Viðvík and Nautabú, where Hjaltadalur then picks up and continues on, passing deep in the fjord valley and culminating in the highland elevations of the valley around the farm Reykir (see Figure 14). From a geological perspective, Hjaltadalur is a glacial valley defined by a series of distinct ecological zones, with traits largely conforming to highland (200+ masl) and midland (100–200 masl) elevations. The inland area of Hjaltadalur is a dale or open valley that narrows as it gets deeper into the fjord. The valley is bisected by the west–east directional glacial rivers of Kolká in the eastern opening of the fjord system within Viðvíkurvjet and Hjaltadalsá in the western end where Hjaltadalur begins. Flanked on either side by these rivers are the Óslandshlidarfjöll and Ás Mountains to the north and the Viðvíkurfjall and Tröllaskagi Mountains to the south. Viðvíkursveit in contrast is a broad, open plain containing coastal,

2 This figure represents an estimate of the total area of the Hjaltadalur-Viðvíkursveit valley. The total area of arable land is roughly 55 km².

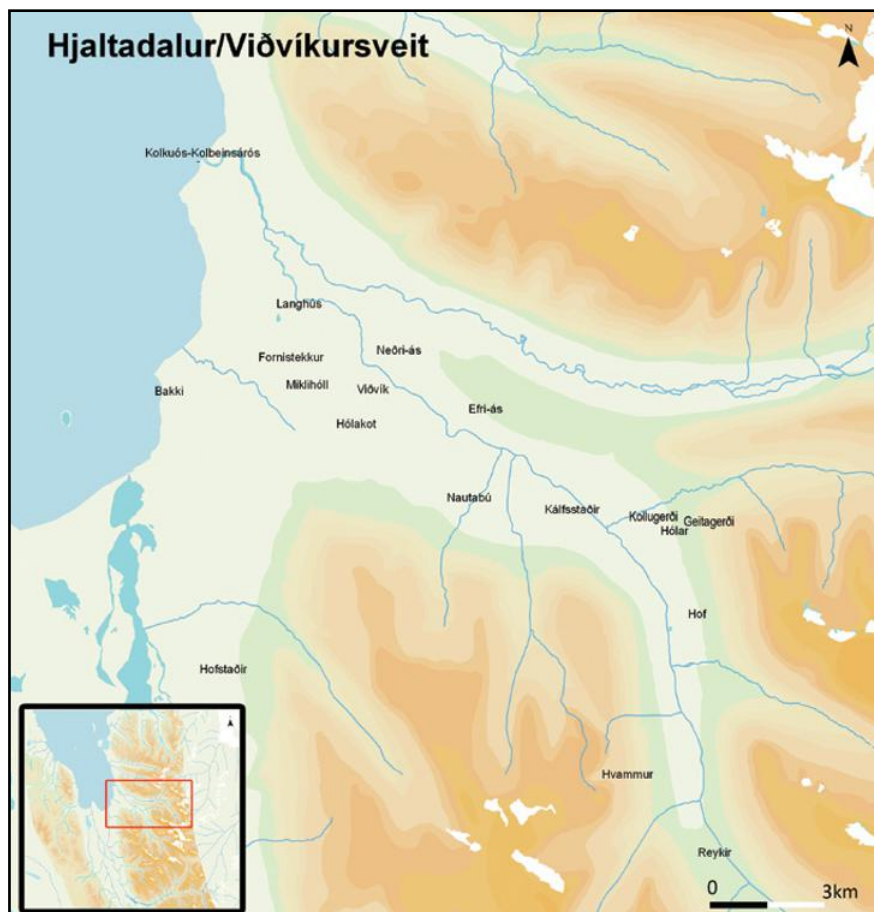


FIGURE 14 *Map of Hjaltdalur and Viðvíkursveit and the sites archaeologically surveyed*

lowland (below 100 masl), and midland locales. Each area offers a different suite of natural resources, with drier soils and dwarf birch forests in the highlands, organic rich soils and iron in the midlands, turf and iron in the lowlands, and driftwood and marine resources in the coasts.

5.2 Research Design of the Hjaltdalur and Viðvíkursveit Survey

Several related factors influenced my decision to select the Hjaltdalur-Viðvíkursveit valley system as the location for my primary fieldwork. Firstly, Hjaltdalur and Viðvíkursveit are an ideal environmental microcosm of

Skagafjörður. From marine resources found at the coast to the woodlands of the highlands, as a valley system this area represents the full range of possible environmental conditions. Secondly, I had previously surveyed two sites in Hjaltadalur, Hof and Hólar, in 2001 as part of my MA project that examined environmental change during the medieval period.³ This survey led to the discovery that the erosional regime in Hjaltadalur, a naturally sheltered valley, was extremely slow. A lack of soil erosion meant that the entire area was covered by stratified aeolian deposits, which suggested to me the potential for well-preserved, albeit buried, sites. Incidentally in the course of collecting soil samples for this survey, I discovered that coring was an exceptionally effective means of conducting subsurface surveys and mapping buried archaeological sites (see Chapter 4 for a full discussion of this methodology). The combination of excellent preservation and a well-developed methodology for examining deeply buried sites made Hjaltadalur and Viðvíkursveit an ideal location for an intensive survey.

Most importantly, however, excellent site preservation within a diverse environment made this valley ideal for examining my hypothesis that, motivated by economic pursuits, specific ecological niches were settled in Iceland from the outset. As I discussed in Chapter 4, one method for examining economic enterprises of this sort is to map out settlement pattern trends and to subsequently analyze these findings through the possible categories of sites defined by a social network approach. Crucial to social network analysis is the identification of the architecture of a system, in this case, the organization of the economy. The architecture of the system can conform either to one of similar sized nodes (a clustered network) or to one of hierarchical nodes (a scale-free network). The range of possible nodes and the organization of the landscape in Hjaltadalur and Viðvíkursveit are hinted at in medieval texts – *Landnámabók* contains a description of the initial 9th-century settlement of Skagafjörður, noting that Hjaltadalur and Viðvíkursveit were originally part of a single land claim made by a wealthy Swedish chieftain named Sleitu-Björn. This territory was, as was common with most of the original land claims, incredibly large, spanning from north of Óslandshlið to south of Hrísháls, including the two valley systems of Hjaltadalur-Viðvíkursveit and Kolbeinsdalur (see Figure 15). Soon after Sleitu-Björn made his home at Sleitustaðir in Kolbeinsdalur he began selling off portions of his claim. Öndóttur bought the land from Kolkuós down to Hrísháls and most of the land to the south of Kolkuósdals River, making his home at Viðvík, a farm that lends its name to the area around it, Viðvíkursveit ('the area around Viðvík'); the well-respected

3 Carter (2003).

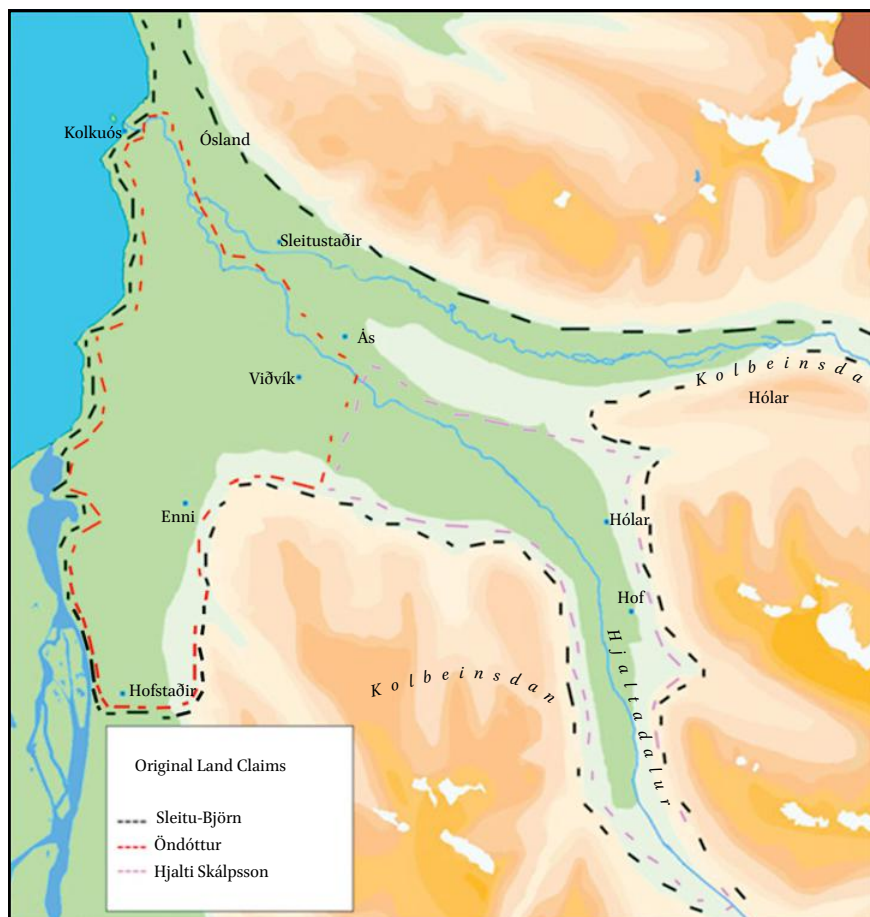


FIGURE 15 Map showing the initial land claims of Hjaltadalur and Viðvíkursveit documented in Landnámabók

Norwegian chieftain Hjalti Skálþsson bought the land in Hjaltadalur ('Hjalti's Dale') southwest of Öndóttur's purchase, and established his household at Hof. These land claims, while smaller than the original land-taking of Sleitu-Björn, cover expansive areas, which I have divided into three potential political units that could represent three separate but likely not mutually-exclusive social networks: the Ás, Hof, and Viðvík Territories.

My research presented in this chapter will examine how landscape organization, documented in settlement pattern trends, structured the economy of sites located in Hjaladalur and Viðvíkursveit. In Chapter 6, I will use these data further to address the question of whether the economy of pre-state Iceland was structured predominately around self-sufficiency or a diverse range of

activities, and how this structure helped to shape the path towards secondary state-level institutions. The data presented here from the coring survey, however, will focus only on identifying whether the economy of pre-state Iceland in Hjaltdalur and Viðvíkursveit represent a homogenous organization (clustered network) or a diversified economy (scale-free network).

To examine these hypotheses intensively requires an immense amount of fine-resolution data. The scale of this task is reduced in Hjaltdalur and Viðvíkursveit thanks to the availability of comparable excavation data from large sites. The sites mentioned in the *Landnámabók* and the sagas have been archaeologically identified,⁴ including the harbor and trading center at Kolkuós,⁵ the chiefly estate at Viðvík,⁶ the chiefly estate at Hof,⁷ the northern bishopric at Hólar,⁸ and the estate farm and 10th-century church at Ás.⁹ It remained unknown whether smaller sites were also present in the area during the first generations of colonization and the subsequent phase of consolidation in landownership during the 13th century. Likewise, the range of possible socioeconomic activities and interactions among sites in the area was entirely unknown.

Beginning in 2008, I surveyed fifteen sites¹⁰ within the Hjaltdalur-Viðvíkursveit valley system (see Tables 9 and 10).¹¹ The designation of a 'site' here conforms to modern farmstead boundaries. In most cases, I conducted a subsurface coring survey of all the arable land owned by these sixteen farmsteads, covering about 4 km² (400 ha). I will discuss the phases of landscape use within each of these sites, making note of both environmental and cultural changes over time. Today there are about forty active farms or summerhouses in the area, but not all of these sites were suitable for this study. Sites were excluded from the study if they were clearly established only within the last hundred years, as most of the summerhouses were, or if site preservation was questionable due to modern construction. Additionally, for three sites that

4 The intensity of archaeological research at these sites varies, with large-scale excavations currently underway at Hólar and Kolkuós, intensive target excavations at Ás, test trench excavations at Hof, and mostly surface survey at Viðvík.

5 Traustadóttir (2004, 2005); Traustadóttir and Hellqvist (2003); Traustadóttir et. al (2004).

6 B. Zoëga (2005).

7 Steinberg (2001).

8 Traustadóttir (2002, 2003, 2004).

9 Vésteinsson (1998); Zoëga and Zoëga (2004).

10 The names of these farmsteads have been in place, in some cases from the Settlement period, with very few instances of change over time, making it relatively easy to use medieval texts as a source of information about each of these sites.

11 The results from this initial research can also be seen in my PhD dissertation (Carter 2010).

TABLE 9 Farmstead sites archaeologically surveyed in the Skagafjörður Landscape Project

Valley	Site	Elevation (masl)	Elevation category	Tax value (hundredths)	Site type	Time period in use	2008 survey
Viðvíkursveit	Bakki	34	coast	50	2	Early Medieval – Historic	coring
Hjaltadalur	Efri-Ás	130	midland	60	1	Sturlunga – Historic	coring
Viðvíkursveit	Fornistekkur	83	lowland	less than 1	4	Early Historic	coring
Hjaltadalur	Hof	180	midland	60	1	Settlement – Early Medieval	coring; test trenches
Hjaltadalur	Hof	180	midland	50	2	Sturlunga – Historic	coring; test trenches
Viðvíkursveit	Hólakot	110	midland	less than 1	4	Late Medieval – Historic	coring; test trenches
Hjaltadalur	Hólar	150	midland	over 100	1	Early Medieval – Historic	coring; site excavations
Viðvíkursveit	Hofstaðir	110	midland	60	1	Settlement – Historic	coring
Hjaltadalur	Hvammur	230	highland	40	2	Late Medieval – Historic	coring
Hjaltadalur	Kálfsstaðir	152	midland	60	1	Late Medieval – Historic	coring
Viðvíkursveit	Langhús	76	lowland	20	4	Late Medieval – Historic	coring
Viðvíkursveit	Miklihóll	105	midland	40	2	Sturlunga – Historic	coring
Hjaltadalur	Nautabú	180	midland	30	3	Late Medieval – Historic	coring
Hjaltadalur	Neðri-Ás	130	midland	80	1	Settlement – Historic	surface survey

TABLE 10 Non-farmstead sites archaeologically surveyed in the Skagafjörður Landscape Project

Valley	Site	Elevation (masl)	Elevation category	Site type	Time period	2008 survey
Hjaltadalur	Efri-Ás	130	midland	6	Early Medieval	coring
Viðvíkursveit	Fornistekkur	83	lowland	6	Early Medieval – Late Medieval	coring
Hjaltadalur	Geitagerði	190	midland	6	Late Medieval – Historic	coring
Viðvíkursveit	Hólakot	110	midland	6	Settlement – Sturlunga	coring; test trenches
Hjaltadalur	Hólar	150	midland	6	Settlement	coring; site excavations
Hjaltadalur	Hvammur	230	highland	6	Sturlunga	coring
Hjaltadalur	Kálfsstaðir	152	midland	6	Sturlunga	coring
Hjaltadalur	Kollugerði	158	midland	6	Late Medieval – Historic	coring
Viðvíkursveit	Kolkuós	5	coast	7	Settlement – Early Historic	coring; site excavations
Viðvíkursveit	Langhús	76	lowland	6	Sturlunga	coring
Viðvíkursveit	Mikliahóll	105	midland	6	Early Medieval	coring
Hjaltadalur	Nautabú	180	midland	6	Settlement – Sturlunga	coring

would have been good candidates for the study – Reykir, Svaðastaðir, and Viðvík – permission to conduct subsurface surveys could not be obtained during my research for this book. Nonetheless, the sixteen sites surveyed are a fair representative sample from the valley.

While most farmsteads in Hjaltadalur and Viðvíkuresveit had already been field surveyed,¹² twelve had never been archaeologically researched using subsurface methodologies. The coring survey of these twelve sites led to the discovery of previously unknown pre-state phases of landscape use at all but two sites. The range of activities discovered included evidence of household occupation (midden deposits, turf walls from potential structures) and what I have called ‘activity area’ features, which are located some distance away from households (see also Chapter 4). These features include activities associated with livestock rearing (animal structures and pens, dense deposits of dung), charcoal making (pits filled with wood ash and charcoal) and ironworking (slag, scorched earth, burnt peat). Phases of occupation were dated using tephrochronology (see Chapter 4). The most crucial tephra layers found in Hjaltadalur and Viðvíkuresveit used in my research were: Hekla 2900 BP (H3), the 872 A.D. Landnám tephra, Veidivötn-Dyngjuháls 1000 A.D., Hekla 1104 A.D. (H1), Hekla 1300, and Hekla 1766. Each of these well-dated volcanic strata served as easily identifiable time markers, allowing me to date material found in layers between these time markers.

Research at each site always began with a pedestrian field survey conducted, whenever possible, with the current owner of the land, who could report the history of the activities and alterations made to the landscape. Of these sixteen sites, eight were active livestock farms in 2008, and all eight farmers indicated that they had within the last fifty years dramatically altered the geomorphology of the landscape through the construction of drainage ditches. Modern tractors and bulldozers have aided attempts to extend the size of usable pastures by draining wetland areas with ditches that transect and run the length of farmstead boundaries, often at a depth between 1 and 2 m. The outcome of these intensive agricultural projects is that farmsteads today have increased acreage for grass production by expanding into areas that would have been partially submerged during the medieval period.

Knowledge of this shaped the next phase of my fieldwork: the subsurface coring survey. As the likelihood of finding evidence of human activity in the pre-state period was low in areas where modern ditches are located, a generalized coring strategy was used, taking cores every 50 m. In areas of the farmstead that were more likely to contain evidence of activity dating to the

12 B. Zoëga (2005).

pre-state period, cores were taken every 25 m. If cultural material was discovered in either of these areas, regardless of the date of the material, a targeted program took cores spaced every 10 m. Typically, anywhere between 150 and 200 cores were taken at a site, but only a portion of these were detailed coring profiles recorded as representatives for the overall area. On average, only 10 per cent of the 150 cores taken at each site contained cultural material, but evidence of human activity was nonetheless discovered for all sites surveyed.

The last phase of fieldwork done in 2008 was to collate some of the coring data with sample test trench excavations. While more work of this kind still needs to be completed, I was able to conduct target excavations at two of the most complex sites (Hof and Hólakot) documented first through the coring survey. Likewise, I am currently working with the Hólar Project, which oversees the intensive, large-scale archaeological excavations at two sites surveyed here, Hólar and Kolkuós. Data from these recent excavations have been incorporated with the results from the 2008–2013 coring survey, providing new insights into the landscape evolution at each of these sites.

5.3 The Ás Territory

The Ás territory is located between the Hjaltadalsá River to the south and the Ás foothills to the north, creating a geological boundary between Hjaltadalur from the neighboring Kolbeinsdalur valley, with arable lands making up about 4 km² (400 ha). The elevation range spans from 100 to 160 masl, with lower elevations located along the Hjaltadalsá riverbanks. This elevation range places the territory within a midland environmental zone, characterized by a mixed geomorphology of wet, organic, and clay-rich soils juxtaposed by hillocks with drier, silty soils. The vegetation is a mix of peat found in the clayey soils and scrub birch and heaths in the drier areas.

From the description in the *Landnámabók*, the area where the medieval farmstead Ás is located appears to be at the intersection of three land claims: Öndóttur at Viðvík, Hjalti at Hof, and Sleitu-Björn at Sleitustaðir (see Figure 15). From the text, it is not clear who in fact owned the rights to Ás, but from later texts and archaeological excavations¹³ it is clear that Ás at one point became a farmstead of an influential elite family in Skagafjörður.¹⁴ Previous archaeological research at Neðri-Ás (as the original settlement farm at Ás is known today)

13 Vésteinsson (1998); B. Zoëga (2005); Zoëga and Zoëga (2004).

14 For example, the sagas and *Landnámabók* mention that the family at Ás was related either through kinship or friendship to the kinsmen of the chieftain Sleitu-Björn and that

has documented several phases of land use for Ás, including the discovery of at least two church structures from different time periods, providing us with some insights into the political and economic dynamics of the valley.¹⁵ Likewise, medieval texts indicate that at some point before 1250,¹⁶ the large Ás farmstead was divided into two farms, Neðri (lower) and Efri (upper); however, this date had not been confirmed archaeologically before my research. Little else was known about the organization of the landscape or the types of economic activities that were carried out here during the pre-state period. I conducted a subsurface coring survey at Efri-Ás to complement the excavation data from Neðri-Ás, and to test whether sites within the Ás territory, an area smaller in size than the Hof and Viðvík territories, contained sites of varying size, complexity, and economic activity.

5.3.1 *Efri-Ás*

Efri-Ás is located on the northeastern bank of the Hjaltadalsá River, situated on the foothills (130 masl) of the Hjaltadalur side of the Ás range. Located squarely within a midland ecology, the area is rich in rangelands for sheep and cattle, juxtaposed by wet, dense, organic bog soils that can produce high yields of grass if the water content of the soils is managed by means of a system of drainage ditches. Today, Efri-Ás is an active farm, but its modern landscape is decisively different than what it would have been in the medieval period. In recent years, an intensive program of cutting drainage ditches¹⁷ at the site has dramatically altered the size of pasturage at the site. In the medieval period, the boundary of the farm fields was demarcated by wetlands formed by the nearby river that parallels the site. Today, an intensive agricultural program has stretched this boundary, using ditches to convert former wetlands into drier soils capable of sustaining grass production.

Before my research, little was known about the earliest phases of landscape use at Efri-Ás. A field survey had been conducted, which identified a number of small architectural ruins visible on the surface that were interpreted as

the earliest Christian church in Skagafjörður was constructed at Ás around 984 A.D. (*Kristni Saga*), indicating a certain degree of wealth from the part of the benefactor.

15 Vésteinnsson (1998); Zoëga and Zoëga (2004).

16 The name Efri-Ás appears in a 13th-century text (*Laurentius Saga*), and Neðri-Ás is mentioned in the 14th-century text, but it is unclear when exactly these separate farms were created and when the name 'Ás' fell out of use.

17 In the summer of 2008, the farmer was in the process of extending his drainage ditches as well as building new a fence around one meadow at the site. The fence cut through the edge of a ruin (probably late in date), but otherwise the site seemed to be in no danger of damage.

modern livestock structures.¹⁸ There had been no previous subsurface surveys to date these structures or to identify any older, now-buried features. Census records indicate that with its rich soils and diversity of resources, Efri-Ás became a large, size-1 farmstead valued at 60 hundredths by 1250,¹⁹ but this date had not been confirmed by archaeological research. The aim of the subsurface coring survey at Efri-Ás was to determine the nature and date of the earliest phases of landscape use at the site.

The pedestrian field survey confirmed an already known and still visible enclosure wall, of an unknown date, along with a number of structures on the southern end of the farm with occupations dating to the 18th through late 19th century (B. Zoëga 2005). In addition to these features, a possible structure, of unknown date, was identified on top of a small knoll located at the northern end of the site (E490985/N584365). No other features were identifiable on the surface.

Coring was conducted in two phases at the site: a broad survey to distinguish dry from wet areas, followed by an intensive target survey of the possible knoll structure and its surrounding area, spanning about 3900 m² (0.39 ha). H₁, H₃, the 1300, and 1766 tephra layers were all well preserved at the site, making dating relatively easy. Targeted coring was conducted in drier areas of the site, discovering a number of features previously unknown at Efri-Ás. Among the most surprising features at the site were dense charcoal and ash layers dating to before 1104 (see cores 1, 11, and 12 in Table 11), over a 25 m area (E490965-990/N584370). No midden deposits were found in association, making it unlikely that this activity represents a full-time farmstead site; rather, this evidence is suggestive of specialized charcoal-making activities at the site. Cultural material is consistently 15 cm below the H₁ (1104) tephra layer, with an aeolian silt deposit separating the two horizons (see Figure 16). Since the soil deposition rate is only 0.01 cm/year during the Settlement period, it is likely that the cultural layer buried under 15 cm of silt was deposited well before the 12th century. Likewise, the charcoal deposits are mixed with the prehistoric H₃ layer, a characteristic often associated with the earliest phase of occupation of sites in Skagafjörður (for a comparison, see the discussion on Hólakot below). Associated with these charcoal deposits is a possible small structure (E490990/N584340). The coring profiles document the presence of turf and charcoal well below H₁ (see cores 27 and 28 in Table 11 and Figure 17). The turf itself contains the prehistoric H₃ tephra, also a common feature of the turf

¹⁸ B. Zoëga (2005).

¹⁹ Efri-Ás and Neðr-Ás are listed as of the properties of the Hólar Bishopric in the Hólastóll 1388 land registry.

TABLE 11 *Coring data from Efri-Ás*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	490965	584370	H3 (16)	charcoal	before 1104	charcoal is mixed with H3; likely to be medieval deposit
9	490989	584372	H1 (38)	turf	after 1104	ruins still visible on the surface are lying on top of H1; likely a more modern structure
10	490985	584365	1766 (6)	turf,	before 1776	material is well below 1766 tephra, making it likely to date to the medieval period
11	490990	584370	H3 (38)	ash	before 1104	charcoal is mixed with H3; likely to be medieval deposit
12	490990	584365	H1 (19); H3 (40)	charcoal, ash	before 1104	material below H1 and likely associated with cores 10 and 11; the area is not a household but is likely an activity area
17	490970	584360	H3 (34)	charcoal	after 1104	material is mixed with an aeolian deposit just below the topsoil; likely dates to before 1766 but after 1104
27	490990	584340	1766 (9); H1 (31); H3 (70)	turf, charcoal, floor	before 1104	material below H1; possible small structure (ca. 10 meters long) either a temporary household or more likely a workshop associated with core 27
28	490980	584340	1300 (29); H1 (33); H3 (48)	charcoal, peatash, turf	before 1104	

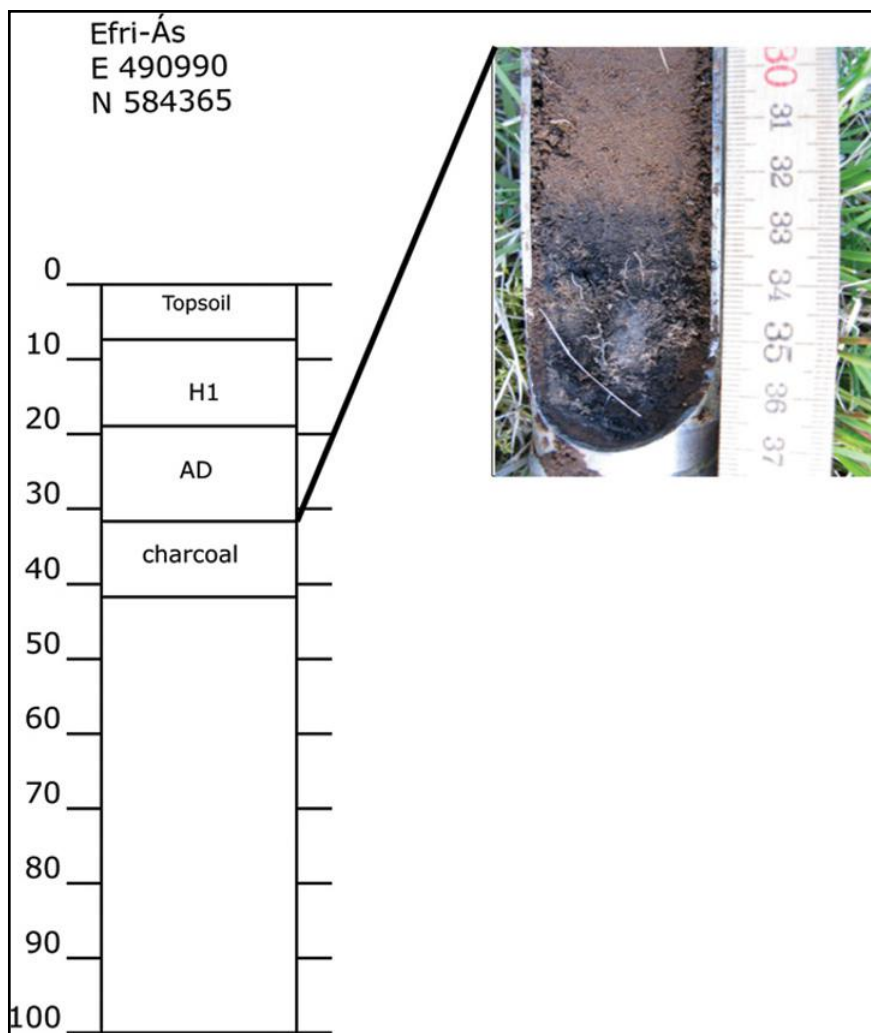


FIGURE 16 *Profile of Efri-Ås core 12*

used in the earliest phases of occupation (see discussion on Hof). The structure itself is approximately 10×5 m, but the shape of the structure is unknown. As with the charcoal cluster, no cultural material is found in this area after 1104.

The first indication of full-time domestic use at Efri-Ås dates to the Sturlunga period (1104–1300), as documented by the coring survey that shows that after 1104, activity at the site resumes with the building of at least one previously unknown structure (see cores 9 and 10 in Table 11). Well-preserved turf was

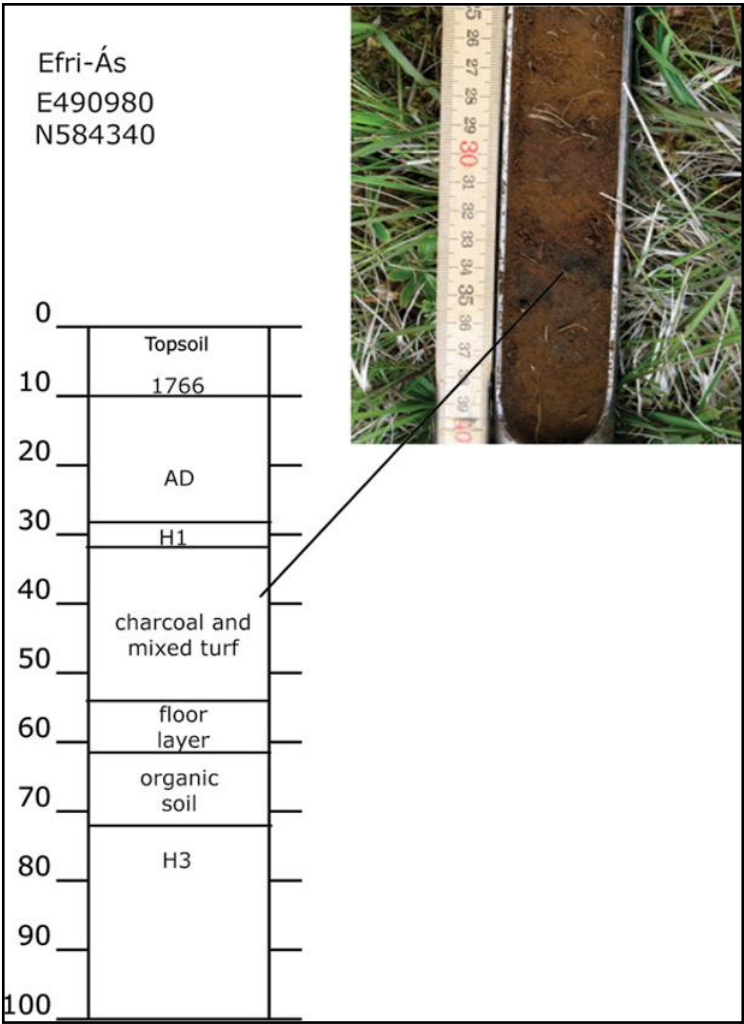


FIGURE 17 *Profile of Efri-Ás core 27*

discovered between in-situ 1766 and H1 tephra layers. A more precise date for the structure is difficult to determine, as it appears there were at least two building phases, one of which occurred likely not long before the 18th century, with the partial remains of the structure still visible on the surface. Turf was discovered in some parts of the feature below 5 cm of aeolian silt, however, suggesting at least two phases of construction. These structures are clearly associated with some of the earliest domestic use at the site. In association with the structure, there is a widespread radius of cultural material, ranging

from animal bone refuse to peat ash and charcoal, presumably the byproduct of cooking and heating.

These data suggest the likelihood that Efri-Ás was used early on, perhaps as a small-scale, specialized economic unit, but it does not appear to have been a farmstead until centuries later. The fact that Efri-Ás was the location of any activity before the Sturlunga period, however, is new information, and changes our understanding of the evolution of the landscape at this site.

5.3.2 *The Organization of the Ás Territory*

Overall, Ás can be characterized during the early pre-state period as a territory with one large farm, a church site, and previously unknown evidence for early activity at the site of Efri-Ás. It was commonly believed that only Neðri-Ás had cultural activity dating back to the Settlement period, but the data from the coring survey illustrate a much earlier phase of occupation. The earliest phase of landscape organization at Efri-Ás does not conform to the characteristics of a full-time domestic farmstead, but instead illustrates specialized production, namely charcoal-making. All households require charcoal for ironworking, making the production at Efri-Ás at the very least a necessary activity carried out by a nearby household, such as Neðri-Ás, but could also represent potential commercial-scale production for trade within the valley. Further archaeological research is needed to test these two possible scenarios, but the presence of any activity at the site is surprising. Traditional wisdom on the settlement process in Iceland has commonly suggested that highland rather than midland sites were ideal locations for early settlers. The highlands, likewise, have plentiful resources of birch for making charcoal, so this cannot be the sole reason behind the utilization of lands in midland ecologies. These data suggest so far that the midlands were occupied simultaneously with the highlands during the Settlement period.

A second discovery is that while the earliest mention of Efri-Ás as a farm in the documentary record dates to the late 13th century, the archaeological coring survey revealed that the site was in use as a farmstead already in the 12th century. While excavations are necessary to confirm the function of the structures identified, the associated household midden debris argues for a domestic residence. Efri-Ás will become a large, size-1 farmstead by the end of the Sturlunga period, a status that no doubt reflects the potential productivity of the soils found at the site. When managed with proper draining, the organic, rich, wet, clayey soils can become highly productive (see Chapter 2). The establishment of a large farmstead at Efri-Ás during the Sturlunga period may reflect economic shifts toward intensified agrarian production.

Collectively, the archaeological data from Efri-Ás and Neðri-Ás suggest that the Ás territory was concerned with predominately agrarian pursuits, but its

central location in the valley, the early establishment of a church at Neðri-Ás, the early production of large quantities of charcoal at Efri-Ás, and the later development of a large farmstead all suggest that sites like Neðri-Ás could have acted as a type of central place, perhaps even coordinating the early production seen at Efri-Ás.

5.4 The Hof Territory

The Hof territory, located directly southeast of the Ás territory, spans a 20 km² (2,000 ha) area covering the most inland reaches of the Hjaltadalur-Viðvíkursveit valley system. The territory has the shape of a long ribbon of land with a natural east–west division formed by the Hjaltadalsá River and bounded by the Ás Mountains to the northeast and the Viðvíkurfjall and Tröllaskagi Mountains to the southeast. This geography shelters the lands within the Hof territory from the type of wind and erosional regimes that frequently afflict many areas of modern Iceland. The elevation range of the Hof territory spans from 100 masl in the midland portion of the area to 300 masl far back into the only highland reaches of the valley.

Historically, the Hof territory carries tremendous cultural importance. Here at Hólar in 1106 A.D. was established the northern bishopric, which would later in the 14th century become the wealthiest landowner in Iceland. At its height, Hólar was home to more than a hundred residents, a marvel in a rural landscape, many of which were craft specialists employed by the church. Ongoing archaeological research under the auspices of the Hólar Project²⁰ has documented the tremendous material wealth of the site, ranging from luxury import goods to the local financing of Iceland's first printing house.²¹ Taking their cues from the evidence found in the medieval documents, most historians have long assumed that Hólar became a farmstead sometime in the 11th century after the farmstead at Hof was temporarily abandoned. New archaeological data, however, demonstrate that the site of Hólar was used prior to the

20 The Hólar Project, directed by Ragnheiður Traustadóttir, began in 2001, and excavation is currently still in progress. The excavation is one of the largest ever undertaken in Iceland – finds so far include over 40,000 artifacts and at least twenty structures all with multiple phases of occupation. The bulk of the work has documented the activities of the bishopric post-1400. It is likely that more evidence from the earlier periods, including the Settlement period, will likely come to light in future excavations.

21 Traustadóttir (2009); Traustadóttir and Zoëga (2006).

11th century, with at least one structure dating to the Settlement period.²² The structure sits below a later, 13th-century feasting hall and has therefore been subject only to partial excavation, which has revealed of the older structure a wall constructed with turf containing prehistoric (H3) and 'Landnám tephra', situated just above the Landnám layer and associated with a Viking Age bead.²³ It is not yet clear what the older structure was used for, but the evidence suggests at least some occupational use of Hólar during the initial Settlement period.

New archaeological data from Hólar indicate that the picture painted by the documentary record of landscape organization and use in the pre-state period is only a partial rendering of the society as a whole. Unknown prior to my research were a date for when smaller sites were established and the manner in which they were organized. The economy of the territory, while better understood for the Late Medieval period, was entirely unknown for the pre-state period. I conducted a subsurface coring survey in both the midland and highland areas of the territory at the smaller sites of Nautabú, Kálfsstaðir, Hvammur, Geitagerði, and Kollugerði in order to complement the existing archaeological data from Hólar and to examine the date of their establishment and the organization of their economy. As part of my MA and PhD research²⁴ I had previously surveyed Hólar and part of the large farmstead site at Hof. As part of the research presented here, I complete the coring survey at Hof, providing comprehensive environmental and archaeological data for the entire site. New test trench excavations were also opened at Hof to clarify the dating of the earliest phase of domestic occupation at the site. Taken together these data provide a complete picture of landscape organization in the valley, for both large and small sites located in both midland and highland environments.

5.4.1 *Hof*

Hof is located at the boundary between the end of the midland section of the Hjaltadalur valley and the start of the highland passes that lead up into the Tröllaskagi mountain range. At 180 masl, Hof is at a slightly higher elevation than its neighbors, but its ecology of wetland and dwarf birch vegetation conforms to that of a midland environment. Situated deep in the fjord valley, Hof is surrounded by mountains that lend shelter from the wind and range-lands for sheep and goats. The Hjaltadalsá River is likewise within easy reach of the farm, at a point where the river is gentle and fordable, providing reliable

22 Bauer and Traustadóttir (2008); Sigurgeirsson (2009).

23 Traustadóttir (2009).

24 Carter (2003; 2010).

transport. As a glacial valley with exposed moraines, the area offers ready access to stones, an essential raw material for building construction. Lastly, the area overall is characterized by drier soils than in other parts of the valley, but still contains a patchwork of nearby wetlands for the procurement of bog-iron ore and turf.²⁵ The environment surrounding Hof thus provides all of the essential raw materials needed by medieval farmsteads: turf, stones, iron ore, water, soils suitable for making pastures, and grazing lands. Hof's position deep in the valley could have also served as a defensive feature, providing its inhabitants a full view of the rivers connecting to the sea, which could allow advance warning to flee or prepare for battle if needed. Today, Hof is an active farmstead that specializes in horses and continues to cultivate grass. In the modern era, as we saw at Efri-Ás, the farmers at Hof have likewise constructed drainage ditches that transect the wetter areas of the site, extending the amount of arable land significantly.

The site of Hof makes frequent appearances in a number of sagas; according to *Landnámabók*, Hof is the first farm established in the area by a chieftain named Hjalti, who is said to have been so influential and wealthy that at the time of his death, "the most magnificent funeral feast ever held in Iceland was the one [Hjalti's sons] celebrated in honor of their father; there were about 1440 guests, and all important people were presented with gifts when they left."²⁶ Census records corroborate the wealth of the farmstead, appraising the farm at 60 hundredths in the medieval period and 50 hundredths in the 19th century. The tax value for the farmstead would indicate that Hof fluctuated between site size types 1 and 2 – either capable of supporting a large household. The name 'Hof' in Old Norse connotes a pagan temple or sacred space. The landscape, marked by numerous high relief areas – hills, mountains, glacial moraines, and plateaus – is an ideal location for hof sites in Scandinavia.²⁷ All of these factors would have contributed to the site's social and economic prominence.

Previous archaeological work was carried out at the site in the late 1990s after the installation of a telephone line unearthed skeletal remains from

²⁵ Ibid.

²⁶ *Landnámabók* (1973, 93).

²⁷ One moraine hill in particular, Skipphóll ('Ship Hill'), would have been a desirable location for a hof. As the name implies, the hill resembles in shape a Viking Age ship. My field survey noted what appeared to be culturally placed stones added to either end of the hill to accentuate the shape. The top of the moraine is fairly flat with a possible outline of a ship made of stones. However, these are only observations and need to be further examined.

14th-century Christian burials.²⁸ Archaeological reconnaissance was resumed in 2001 by the SASS project²⁹ with the goal of determining the site's earliest occupational date. The area was first subsurface surveyed with cores³⁰ followed by remote sensing. Soil profiles recorded from the coring survey were used to reconstruct the medieval environment at Hof, delineating two separate geological areas at the site: a natural raised plateau made up of dry rocky soils (180 masl) on the northern half of the site, and beneath this plateau to the south, flat wetlands made up of bog soils extending toward the river. To the west lies a field containing a number of small mounds thought to be potential cultural features, but as of 2001 these features had not been archaeologically surveyed.

Pre-modern cultural material was discovered on the plateau in 2001, including the ruins of a partially observable structure. No cultural material was found in the wetland areas, which is consistent with the geomorphology observable in the coring profiles that indicate that the area had only recently – within the last fifty years – become drier through the construction of drainage ditches. These areas would have likely been partially submerged in the Medieval period. Lastly, coring profiles taken in 2001 suggest that Hof was abandoned sometime before 1104 and then reoccupied just after 1300. One possible explanation is that the soil profiles document multiple episodes of landslides from the rocky slopes of the mountains that surround Hof. While the mountain slopes may rendered Hof an optimal visual vantage point and sheltered the farmstead from winds, they also deposited large quantities of stones and boulders onto the site.

The remote sensing survey was targeted on the structure found on the plateau. Conductivity measurements indicated at least two oval-shaped features (E495580/N579630). Two subsequent test trenches were placed, cutting across the entire width of the structure. The trenches were positioned with the goal of hitting outer walls, an area inside the structure, and an area outside the walls of the structure. These trenches confirmed the conductivity results and suggested two building episodes of perhaps a single structure with two separate phases. 'Trench 2' clearly revealed late-medieval turf (post-1300) as well a number of loom-weights. This portion of the structure has an estimated interior measurement of 5 m in diameter, and a length of perhaps 15 to 20 m. 'Trench 1' revealed some cultural material below an in-situ H1 (1104) tephra layer, along with several rows of large stones, but the issue of whether any turf

28 Gunnarsdóttir (2000).

29 Steinberg (2002).

30 See Carter (2003).

was preserved remained inconclusive.³¹ The structure's shape, size, and use of large stones suggest that it was a domestic longhouse. The overall conclusion was that this structure, given its size and shape, likely dated to sometime before 1104, but there was no definitive evidence to support this conclusion. What was clear, however, was the existence of a late medieval structure. These data suggested that either the original settlement farmstead was no longer preserved, or that possibly it was not located on the modern day farm known as Hof.

In 2008, 3 m of Trench 1 (E495580-83/ N579629) were reopened and extended from 90 cm to 1.5 m in depth with the goal of dating the structure, and therefore dating the earliest landscape use at the site. The original trench stopped when the prehistoric H₃ was reached, but I wanted to examine if the H₃ that was encountered in 2001 was actually part of a turf wall (see Figure 18). Excavations since 2001 from the nearby sites at Keldudalur,³² Kolkuós,³³ and Stóra-Seyla³⁴ have all determined that the oldest structures constructed were made from turf containing a significant quantity of H₃. A practical explanation for his pattern is that when turf is cut, it usually takes at least two weeks to dry out before it can be used as building material. Turf containing a high percentage of tephra is, on average, drier than those without it. While tephra in turf can reduce the drying time, it can also make the turf too dry and hence difficult to shape and work with.³⁵ Misshapen turf blocks do not sit well in a wall, which can cause cracks and breakage shortly after construction. It is possible that the first settlers would have found the drier turf with H₃ appealing, but structures built from this turf would not have been durable and within a few years would have needed to be either mended or replaced. This pattern is seen at Kolkuós, Keldudalur, and Stóra-Seyla; at each site the oldest structures built from yellowish turf were ephemeral and were replaced shortly after the sites were established.

The 2008 excavations determined that the turf wall at Hof contained two different kinds of turf: a yellowish turf with a high percentage of H₃ and some Landnám tephra found in the lower layers of the wall; and a red-purplish turf also with some Landnám tephra located in the upper layers of the structure. The wall itself sits below in-situ 1300 and H₁ (1104 A.D.) tephra layers, dating the structure to before 1104. It is difficult to determine whether the two turf types represent a repair in the wall or whether the wall had originally been built with

31 Steinberg (2002).

32 G. Zoëga (2009a).

33 Traustadóttir (2005).

34 Steinberg (2005).

35 Sigurðardóttir (2008, 9).

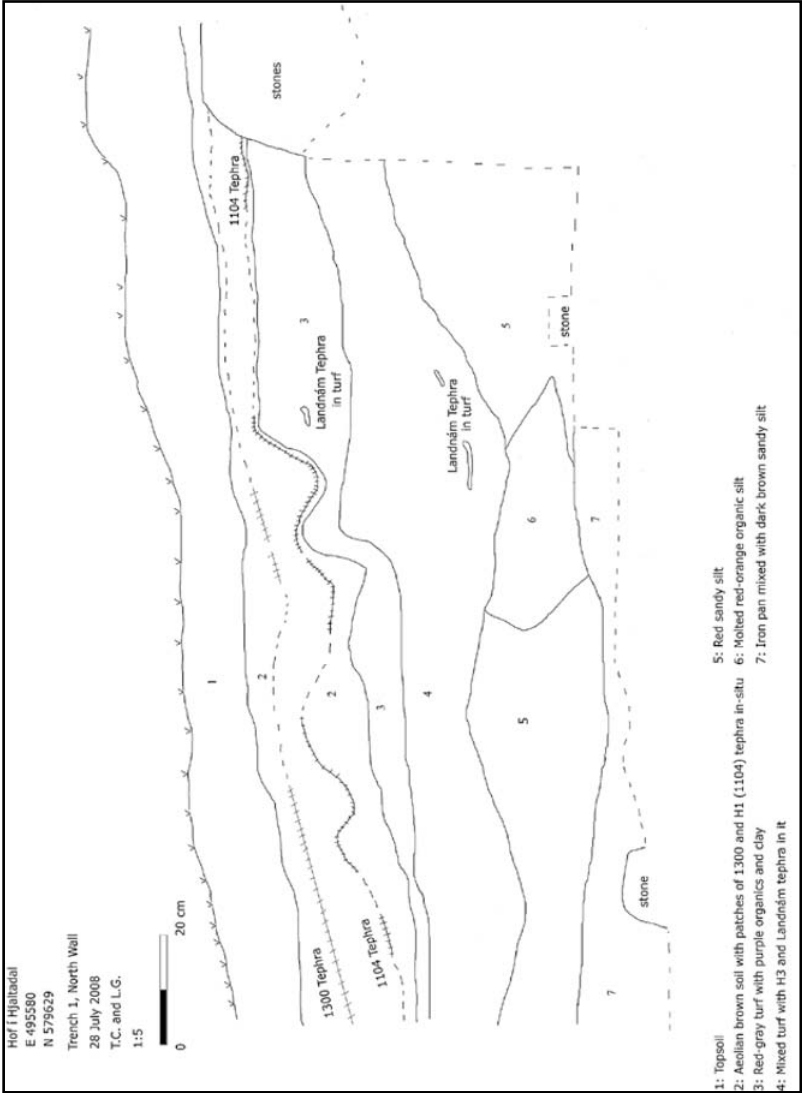


FIGURE 18 Profile drawing of Hof test trench

both. What can be said with certainty is that the structure represents the earliest occupation of Hof and likely dates to the 9th century, and was abandoned sometime before 1104. The preservation of the turf is moderate, with some well-preserved areas on the sloping sides of the hill and poorly-preserved areas

on the top of the hill as a result of normal erosional patterns. It is likely that some of the well-preserved areas represent turf blocks that have collapsed away from the standing wall.

In addition to turf, stone was also used as a building material in the structure. Inside the structure on either side of the turf walls are parallel rows of stones. Medieval longhouses often contain wooden sleeping benches built up from a stone platform. The overall design of the structure – its oval shape complete with stone platforms for benches – indicates that the structure was likely a longhouse dating to the earliest phase of occupation in the valley.

Additional subsurface coring was likewise performed, covering an area of 20,875 m² (2.9 ha). The goal of the 2008–2013 survey was to examine the fields to the west of the plateau that contain no fewer than six mound-like features. The largest of these mounds measured 30 m in length (E495554/N579748), while the smallest mound measured just 15 m in length (E495516/N579741). All six mound features were cored and revealed similar results: the mounds are not cultural, but are glacial moraines created by receding glaciers that carried with them large amounts of stone and sand debris. The area itself, however, holds cultural significance as the soils are characteristic of dry conditions suitable for grass production and grazing during the pre-state period. Small traces of cultural material, such as charcoal and peat ash, were found in this field (see core 13 in Table 12). These cultural layers lie beneath an in-situ 1300 tephra lens and above a H1 tephra layer, dating the material to between 1104 and 1300.

The coring survey and subsequent test excavations at Hof have begun to further discussions on how Hjaltadalur was transformed into a political and economic landscape during the pre-state period. Hof represents a classic chieftain farmstead: a large land claim within a resource-rich environment capable of supporting a large household through agrarian pursuits. Farming and household activities are the dominant features of the site. If we treat Hof as an isolated farmstead, then these data strongly suggest that the economy of Hof was centered on subsistence; however, if we begin to examine these data within the larger social setting, viewing Hof in relation to other sites, a different pattern of landscape use might appear. The recent excavations at Hólar, for example, have begun to suggest that the reach of Hof extended beyond the boundaries of its farmstead, with individuals likely connected to Hof³⁶ engaged

36 The medieval texts trace the family ancestry of those who lived at Hof to those who established the farmstead at Hólar. Likewise, the two sites are within 3 km of one another; typically farmsteads are placed further apart unless they belong to members of the same family.

TABLE 12 *Coring data from Hof*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	495586	579635	H1 (32)	charcoal, ash	before 1104	activity area
2	495587	579629	H1 (55)	turf (with H3), charcoal	before and after 1104	possible structure natural
3	495540	579650	H1 (14); H3 (30)			natural
4	495530	579650				natural
5	495520	579650	H3 (12)			natural
6	495485	579655	H3 (40)			natural
7	495450	579530	1300 (10)			natural
8	495420	579540	H1 (15)			natural
9	495580	579630	H3 (28)			natural
10	495580	579635	H1 (18); H3 (20)			natural
11	495580	579640	H3 (18)			natural
12	495580	579645				natural
13	495585	579645	1300 (22); H1 (29)	charcoal, peatash, turf	before 1300, after 1104	possible structure

in separate enterprises throughout the valley. The question remains, however, of whether a new pattern can be documented through a survey of smaller sites within the Hof territory.

5.4.3 *Nautabú*

Nautabú is located within the Hof land claim on the southwestern side of the Hjaltadalsá River, directly opposite Ás. The site is nestled at the base of the Viðvíkurfjall Mountain at 180 masl, placing it at the upper end of a midland ecology. As a broad, open dale with few trees, few places in the valley are obstructed from view; Nautabú, however, is positioned at a natural bend in the landscape, out of view from both Viðvík and Hof but within sight of Ás. Nautabú features an unobstructed view of Ás as well as the sea and the Kólká and Hjaltadalsá rivers. Nautabú is situated in a strategic geographic position in the valley, at the intersection of the Ás, Hof, and Viðvík territories with a clear view

of all of the water routes in the valley. Today Nautabú is an active farm that cultivates grass and barley and raises mostly horses and sheep, with some cattle.

Previously, little was known about the landscape history of Nautabú. The site is one of the few places in Hjaltadalur mentioned in *Landnámabók*; its name indicated a place where cattle are kept.³⁷ However, *Landnámabók* does not state whether Nautabú is a farmstead at the time of settlement or who, if anyone, had settled there. The name seems to imply the land was used by another farm, but this interpretation had not been archaeologically tested before my 2008–2013 survey. Census records indicate that Nautabú was a farmstead by the 14th century³⁸ and was assessed at 30 hundredths – approximately average size (site type 3).

The field and coring survey was aimed at determining the earliest period of landscape use at Nautabú and at clarifying the nature of any economic activity present at the site. The field survey noted the presence of a number of modern-era ruins, including traces of a farm mound that been bulldozed and flattened in 2000. Extensive coring was carried out at the site, covering an area of 154,800 m² (15.48 ha), with targeted coring spaced every 5 m taken around the ruins of the old farm mound.

Soil profiles documented in the general coring program carried out at the site conclude that the environmental landscape at Nautabú is overwhelmingly wet, both presently and throughout the medieval period. The soils are highly organic, consisting primarily of peat in most areas of the modern farm despite the presence of deep drainage ditches crosscutting the landscape. One exception is the drier soils at the low reaches of the farm's mountainous backdrop – an area ideal for grazing, but also an area where multiple landslides have occurred³⁹ (E90630/N582438). A second exception is the eroded, rocky landscape southeast of the modern farmhouse. The erosional regime currently at work is the result of recent cultural efforts to divert the Nautabúsá River, leaving behind a dry riverbed of large boulders and cobbles. The change in the river system is a likely contributor to the saturation of some of the modern fields, but it is clear that Nautabú has been a wetland environment from remote prehistory. However, it should be acknowledged that the present landscape is radically different from that of the medieval period and it is possible that some features of the site have disappeared due to anthropomorphic forces.

37 *naut*: bull; *bú*: storing place.

38 Nautabú is listed as a property of the Hólar Bishopry in the Hólastóll 1388, 1449, and 1550 land registries.

39 One of these landslides, documented in recent history, was powerful enough to demolish an animal structure, carrying it several hundred meters downslope.

The most drastic agent of landscape change at the site is, however, the recent bulldozing of a number of ruins⁴⁰ and the partial flattening of the lower fields through the use of heavy machinery. The most striking cultural feature of the site is the remnants of a farm mound (E490550/N582500). Turf and household debris are visibly eroding from the remains of the mound. A series of cores were taken to determine whether any cultural material was still in-situ (see cores 1–3 and 5 in Table 13). Two areas were immediately ruled out as potential survey areas: the top of the mound, due to a modern cement silo now covering the area; and the vicinity north of the mound, which after considering the topography and shape of the remaining ruins was determined to form the downhill path of the dumped bulldozed debris. The southern end of the mound appeared to be the least disturbed, so coring was concentrated in that area. The coring profiles revealed 40–50 cm of mixed, disturbed cultural material. The material consisted primarily of turf and ash, with some modern ceramics. Beneath this heavily mixed horizon, around 40–55 cm, however, was

TABLE 13 *Coring data from Nautabú*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	490560	582500	H1 (58); H3 (103)	dense cultural material	mostly disturbed, but some material seems in-situ (before 1104)	bulldozed area, but a pre-1104 structure lies beneath it
2	490560	582510	H1 (49); H3 (72)	dense cultural material	mostly disturbed, but some material seems in-situ (before 1104)	bulldozed area, but a pre-1104 structure lies beneath it
3	490560	582520	1300 (13)	charcoal	before 1300	activity area
5	490580	582500	NA	dense cultural material	probably before 1300	activity area
9	490555	582570	H3 (31)	charcoal; plowed	modern	activity area
12	490500	582820	NA	charcoal	modern	activity area

40 Some of these ruins, including a smokehouse and storage unit, were still standing as late as 2000.

a less disturbed area mixed mostly with soil that ended in a thin lens of aeolian silt (see Figure 19). At 56 cm was a distinct H1 (1104) layer in silt; as this layer was not mixed with turf, it is possible that the layer is in-situ. Below the H1 layer was 20 cm of turf, followed by an additional 12 cm of ash and charcoal. Unlike the upper layers, there was no modern material, suggesting a primary deposition for these cultural horizons. From 95 cm to 1.10 m are natural deposits including an iron pan, an in-situ prehistoric H3 tephra layer, and sterile soil. Further excavations are necessary, but the data here are suggestive of cultural material well before 1104; this area therefore is potentially the oldest occupied area of the site. Coring around the perimeter of the southern end (E490560/N582520) identified dense concentrations of charcoal below an in-situ 1300 tephra layer, suggesting the area was certainly in use before 1300.

The wet environment at Nautabú has some advantages. First and foremost, wet and even partially submerged soils are prime areas for growing sedges and barely. Even today barley grows in several of the farm's soggy fields. If we consider the name 'Nautabú' as an indication of the commercial focus of the farm, then the ability to grow both sedges and barley would serve a cattle farmer

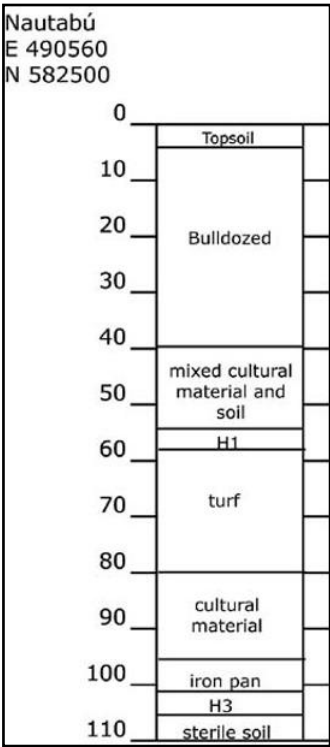


FIGURE 19
Profile of Nautabú core 1

well – both pack higher caloric nutrition compared to other grasses, increasing the efficiency of the high bulk of fodder needed to feed herds of cattle. While perhaps not offering the most pleasant conditions for domestic residence, Nautabú is an ideal place to raise livestock, with mountainous rangelands available for sheep and sedges and barley for foddering both cattle and sheep. The most important discovery unearthed by the coring survey is the presence of cultural activity in the pre-state period for this midland site. The level of activity at the site suggests that Nautabú was not a domestic farmstead, but was instead a specialized activity area, much like Efri-Ás was in the Ás territory.

5.4.4 *Kálfsstaðir*

Kálfsstaðir is located on the east side of the Hjaltadalsá River, directly opposite Hof and Hólar. Like most farms in Hjaltadalur, the physical landscape at Kálfsstaðir is complex and can be accurately described as a microcosm of the valley system, comprised of fields at upper and lower elevations that range from hay fields at 130 masl to 180 masl in the higher reaches of its rangelands. The higher elevations of the farm have visible dry, silty soils, now partially eroded, exposing a rocky subsurface. At the lower elevations of the site, the land is a patchwork of visible wetlands interspersed by numerous natural mound features. Today, Kálfsstaðir is one of the most active farmsteads in Hjaltadalur, with extensive grass fields and livestock. Like most active farms in the valley, the boundaries of arable land have been extended in recent years through the construction of extensive drainage ditches that follow the outer perimeter of the fields and also transect some fields across the middle. For example, today the grass fields located at the lowest elevations at the site extend all the way down to the river, with three parallel rows of drainage ditches cutting across each field. This extensive drainage system has no doubt altered the use of the landscape at Kálfsstaðir by increasing its overall level of agricultural productivity.

Kálfsstaðir is first mentioned in a 1203 bishopric document, which states that a man who worked at Hólar kept a *bú* there. Clues about the original use of the farm have been derived from the name of the site, *Kálfs-staðir*, which can be interpreted in at least two different ways. The name could be an economic reference, meaning a place where calves were kept (*kálf/ur*: cow; *staðir*: place), but Kálfur is also a man's name, and could be referring to 'Kálfur's farm'. In *Landnámabók*, 75 per cent of all the place names mentioned contain the component *staðir*,⁴¹ a tradition with antecedents found in Norway. Historians often have cited farmsteads with the *staðir* component in their names as

41 This is not to be confused with church *staðir* (singular *stadr*) established after 1100 A.D. (see Chapter 6).

linguistic evidence of early Settlement period sites. This interpretation has been applied to Kálfsstaðir, but prior to my survey this claim had not been tested by archaeological research. Census records indicate that Kálfsstaðir was an active domestic farm by the 14th century,⁴² with an assessed value at 50 hundredths, and later in the 18th century at 60 hundredths. The tax appraisal of the site indicates that at the time Kálfsstaðir became an active farm, it was highly productive, ranging between site size types 1 and 2. Little else was known about the site, especially whether or not the area had been used prior to the 13th century. The coring survey was aimed at identifying the earliest occupational history of landscape use at the site and to determine what the environmental conditions had been prior to the construction of modern drainage ditches.

As no previous archaeological work of any type had been performed at the site, the survey of Kálfsstaðir began with a 25 m spaced pedestrian field survey of the entire area. The survey uncovered few visible features, so it was decided that a broad generalized coring survey of the site and surrounding region was necessary, covering an area of 284,704 m² (28.5 ha). The survey was organized by dividing the site into three potential research areas that correspond to elevation: the visibly wetter lower fields closest to the river (130 masl), where it was hypothesized that little or no pre-state activity took place; the somewhat drier fields above the river (155–170 masl), where it was hypothesized to be an area with pre-state activity; and the more mountainous, drier upper fields (175–180 masl), where the modern farmhouse and barn are located, and the hypothesized location of any such pre-state activity as existed.

The pedestrian field survey of the upper field discovered adjacent to the modern house a stone foundation of an 18th- or early 19th-century barn (E492405/N582235), with three of the four wall foundations still clearly visible. Southeast of the modern house, heading towards the foot of the mountains (E492645/N582175), the remains of a stone boundary wall can be seen, but its date of construction and use are unknown. While a number of areas on the upper field document continued occupation of the site from the 18th century through the present, there are additional late medieval cultural deposits (see cores 15, 17–20 in Table 14). Directly south of the modern house and former barn (now a storage shed) is a mound built up of dung sometime before 1766, but also of midden material (charcoal, ash, small pieces of turf) before 1104 (see cores 15 and 17 in Table 14 and Figure 20). The material is denser above the H1 (1104) tephra layer, but a significant amount of charcoal can be found below it. The area does not appear disturbed, suggesting the presence of early

42 Kálfsstaðir is listed as one of the properties owned by the Hólar Bishopric in the Hólastóll 1388, 1449, and 1550 land registries.

TABLE 14 *Coring data from Kálfsstaðir*

Core	ISNET	E	ISNET	N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
4	492630	582687	H1	in turf	turf w/H1		after 1104	possible wall
5	492630	582688	H3 (23)		ash		after 1104	activity area associated with structure seen in core 4
15	492365	582210	H1 (29)		charcoal		before 1104	midden
17	492376	582210	H1 (29); H3 (35)		charcoal, turf		around 1104	midden
18	492390	582200	1300 (27)		charcoal		before 1300	activity area near modern animal enclosure
19	492385	582220	NA		charcoal		before 1300	activity area near modern animal enclosure
20	492397	582245	H1 (39); H3 (50)		ash, charcoal, turf		after 1104	disturbed area; material is likely modern
23	492405	582225	H1 (20); H3 (33)		dung		before 1104	activity area
24	492410	582250	H3 (35)		dung, turf w/H3		before 1104	livestock structure
25	492580	582410	H1 (29); H3 (32)		dung		modern	activity area
27	492550	582420	H1 (13); H3 (28)		dung, charcoal, peatash		dung-modern; charcoal-before 1104	activity area
28	492500	582440	NA		charcoal		modern	activity area
29	492550	582460	H3 (40)		dung		modern	activity area
30	492575	582460	H3 (30)		dung		modern	activity area
35	492540	582500	NA		dung		modern	activity area
36	492425	582425	H3 (40)		charcoal, dung		before 1766	activity area; mixed in an aeolian deposit below the topsoil horizon – likely before 1766
38	492545	582370	H1 (19); H3 (40)		charcoal		before 1104 and modern	activity area
39	492540	582430	H1 (18)		charcoal		before 1104	activity area

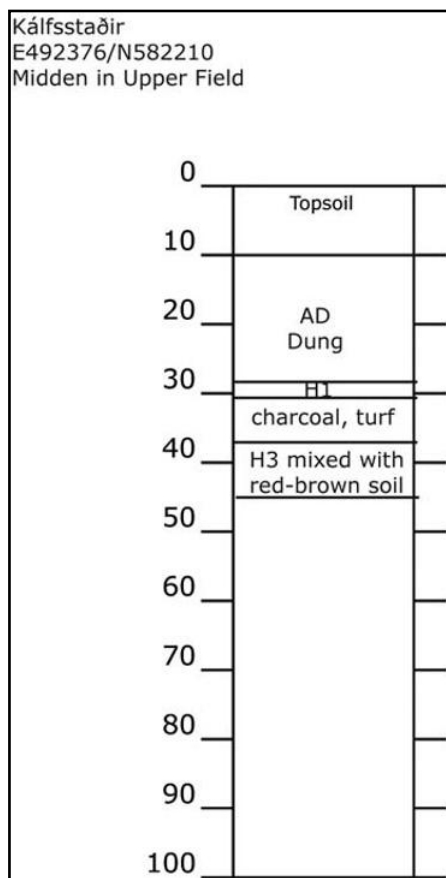


FIGURE 20
Profile of Kálfsstaðir core 17

medieval activity at the upper fields of the site; however, the small amount of material suggests an inconsistent activity pattern, either as a seasonal or one-time use of the area.

In a nearby modern animal enclosure the coring survey discovered additional early cultural material, dating to between 1104 and 1300, with a continued use of the area through the present (see cores 18–20 in Table 14 and Figures 21 and 22). A lens of charcoal and a small amount of turf were seen in the profiles, situated between an in-situ H1 (1104) and 1300 tephra layers (see Figure 22) and covered a sizable area (roughly 30 × 30 m). These data suggest a greater intensity of activity at the site after 1104.

The field survey of the lower, predominately flat fields near the river identified no visible surface features. The subsurface coring was done at 50 and 25 m spaced intervals. The geomorphology of these fields indicates that even though these lands have recently been extensively drained, the physical properties of

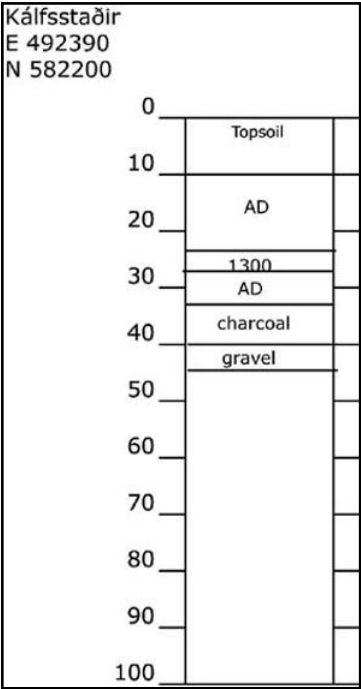


FIGURE 21
Profile of Kálfsstaðir core 18

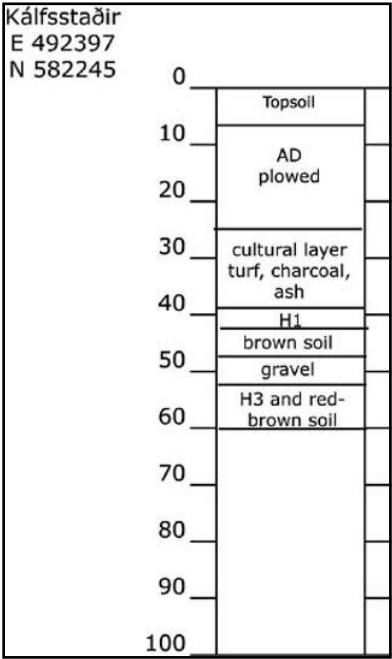


FIGURE 22
Profile of Kálfsstaðir core 20

the soil can still be classified as highly organic, with peat making up the largest percentage of plant material. The soil horizons below the topsoil lens are characteristic of bog soils, indicating that in the medieval period this area would have been partially submerged under stagnant water. No cultural material of any type was identified in this area.

The pedestrian survey of the fields above the river identified a number of small, potentially cultural mounds. These areas were the focus of targeted, tightly spaced 5 m coring, while the surrounding fields were cored at 25 m intervals. As with the fields by the river, the soil morphology of this area is characteristic of a wetland ecology, with water-saturated, organic, and iron-rich soils. These conditions extend back to prehistory. The mound areas, in contrast, are comprised of silts, with horizons extending to the H₃ tephra layer, indicating that they would have been dry even in the medieval period.

The targeted coring of the mound features revealed no cultural material. It is likely that these mounds, as we have seen at other sites in the valley, are the product of glacial movement that left behind mounds of earth and stone. The single exception was a large knoll covering roughly 25 m², at a relief of 10 m higher than the surrounding fields. The soil on the knoll is consistent with other mound features, made up of dry silt dating from the prehistoric through the modern period. An old, modern-era horse barn and pen are located at the top of the knoll (E492587/N582390). Coring was systematically conducted across and around the knoll to document the extent of dry soil horizons and to locate any evidence of historical occupation. In what will emerge as a common pattern⁴³ seen at other small farms in Hjaltadalur and Viðvíkursveit, the earliest evidence of human occupation at Kálfsstaðir was documented on the site's high knoll. The upper layers of the coring survey's profiles consist of at least 200 hundred years of dung deposits. Below these horizons, is a well-preserved in-situ H₁ (1104) tephra layer, with charcoal and dark decomposed organic material, likely hay, below it (see cores 23–25, 27, 28, 30, 35, 36, 38, and 39 in Table 14 and Figures 23 and 24). Unlike the earliest known sites in the valley, such as Hof, there is an aeolian deposition (average of 10 cm) between the prehistoric H₃ tephra layer and the beginning of cultural material at Kálfsstaðir, perhaps indicating that land use occurred before 1104, but was not actively used in the 10th century. The material is consistent with that characteristically found in and around animal structures. With the surrounding partial wetlands, it is likely that the area was in use for housing and grazing animals in the Early Medieval period, an activity that carries through the modern day.

43 See the discussion on Hólakot, Fornistekkur, Miklihóll, and Langhús.

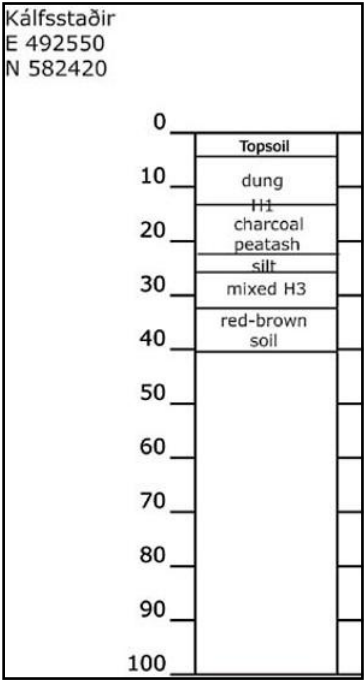


FIGURE 23
Profile of Kálfsstaðir core 27

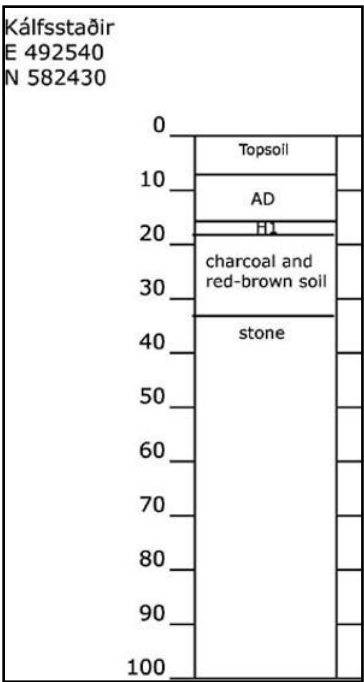


FIGURE 24
Profile of Kálfsstaðir core 39

Lastly, the pedestrian and coring survey identified a small ruin (E492630/N582690), measuring about 5×10 m, still partially visible on the surface (see cores 4 and 5 in Table 14). Cores taken from turf walls of the structure contain multiple H1 (1104) layers, dating the feature to after 1104, but likely well before the 18th century considering the 10 cm of aeolian deposits on top of the existing turf.⁴⁴ Little else could be determined about the structure, but given its small size and lack of associated cultural material, we can surmise that it was likely used for housing or milking animals.

Taken together these data suggest a long history of agro-pastoral activity at the site, with archaeological material predating the earliest textual reference of the farm by at least a hundred years. What is lacking at the site, however, is unambiguous evidence for an early medieval farmstead. The data here suggest that the land was used in raising livestock from a very early date, but it is highly probable that the land did not become a residence until at least the late 13th century, and likely not until the 14th century – a date still earlier than that indicated by the census records. When we consider the archaeological data in conjunction with the textual sources and place-name analysis, we can conclude that Kálfsstaðir likely was in some way connected to the activities coordinated at the larger sites of Hof and later Hólar.

5.4.5 *Hvammur*

Hvammur ('grassy hollow') is located far back in the fjord valley system of Hjaltadalur, south of Kálfsstaðir and Hof, and within a few kilometers north of the site Reykir, where the slopes of Tröllaskagi Mountain begin. At 230 masl, Hvammur is a highland site, with a characteristic highland ecology of moderate-relief, grass-covered hills and dry, silty, rocky soils. The farm is abandoned today, but the lands are still used for grazing horses and sheep owned by the agricultural department at Hólar University, and by the neighboring active farm at Reykir.

There are no early textual references to Hvammur; the site is listed as land owned by the Reynistaðir cloister by 1295 and later as a farmstead owned by Hólar⁴⁵ in the 14th century, and is mentioned as a farmstead in the 15th century when it was assessed at a tax value of 40 hundredths. This relatively high tax value suggests the site was moderately productive, making it a site size type 2.

44 The 1766 tephra layer is consistently found within the topsoil horizon, making it highly probable that the age of the deposits below the topsoil or 'A horizon' is older than 200 years. This observation is consistent with the average rate of topsoil growth. In the lowland areas of Skagafljörður, the average topsoil accumulation rate is 0.04 cm/yr. Ten centimeters of topsoil, therefore, take about 240 years to accumulate; it is therefore no wonder that the 1766 layer is frequently found at the base of the topsoil horizon.

45 Hólastóll 1388, 1449, and 1550 land registries.

The name of the site would suggest that the area was suited for growing grass and for grazing animals, two features that would have increased the property value of Hvammur. Prior to my 2008 survey, no previous archaeological research had been conducted at the site to test these observations gleaned from the textural record.

The field and subsurface coring survey was conducted at Hvammur to determine the earliest date of occupation and to examine the features of a highland site's economy in relation to those of the midland and lowlands sites in the valley. The coring survey covered the entire farmstead and surrounding region, making up an area of 124,740 m² (12.5 ha).

A pedestrian field survey was conducted at the site, noting the presence of numerous late 19th- and early 20th-century structures. The abandoned farmstead mound (E494927/N575711), barn (E494910/N575500), and cement silo (E494898/N575686) sit on a broad knoll, with old enclosure walls (E495815/N575385) scaling up toward the reaches of the farm's mountainous backdrop. A number of small animal structures and pens likewise dot both the higher and lower elevations of the site, notably a 10 m long u-shaped turf structure⁴⁶ (E494810/N575707) and stone wall (E494810/N575724) located behind the farmstead, and a series of stone foundations (E495110/N575700) in front of the farmstead at the lowest elevations of the site. In addition to these structures, two grass fields, located north and east of the farm mound⁴⁷ were noted as possible areas of past activity, although no features were visible on the surface.

The most striking feature of Hvammur noted in this survey is its contrasted landscape, broken up into areas with thin soils and an almost continuous carpet of rocks that stretches across the uppermost areas of the site juxtaposed by a network of streams and pockets of deep organic bogs and partial wetlands at the lower reaches of the site. These two environmental extremes, however, are connected through an overarching erosional regime of the Tröllaskagi Mountain, which has altered the underlying water table at the site. As the sediments from the mountain are deposited at lower elevations, the soils act as a kind of sponge bringing water up closer to the surface. The end result is a higher water table and the formation of blanket bogs. Soil profiles from the coring survey indicate that this process has a long history at the site, and probably began in the Early Medieval period. While erosion has intensified in the modern era, the medieval landscape was likewise a mixture of rocky and boggy areas, reducing the total area of arable land. The coring survey was therefore

46 Likely a *rétt* or *kvíar* (animal pens) dating to the early 20th century.

47 Although there is no current residence at Hvammur, these grass fields are still in use today by Hólar.

concentrated in the grassy fields in front of the modern farm mound, around the modern house and barn, in the surrounding rangelands, and in and around the area where the stone foundations were located. Areas badly eroded or near existing bogs were sampled, but ruled out as potential intensive survey areas.

Coring in the surrounding rangelands did not reveal any cultural material. These soils are highly organic, and moderately waterlogged. These environmental conditions would have been similar in the prehistoric and early Settlement period, as these organic soils can be found immediately above and below the prehistoric H₃ tephra layer. As discussed earlier for Nautabú, semi-wet soils are able to grow rich grasses and sedges, making for excellent pastures. However, the high frequency of stones at Hvammur significantly reduces the total area of available rangeland.

Coring profiles taken in the area surrounding the farmhouse and barn revealed only modern cultural material (for example, see core 27 in Table 15).

TABLE 15 *Coring data from Hvammur*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
2	494950	575610	1766 (10)	bone, peatash	before 1766	activity area
3	494945	575610	H1 in turf	turf, charcoal	after 1104	activity area
4	494960	575630	1766 (7)	bone, charcoal	before 1766	activity area
5	494960	575650	NA	charcoal	after 1104	activity area
6	494960	575670	1766 (10)	ash, bone, charcoal	before 1766	activity area
7	494980	575670	NA	charcoal	modern	activity area
17	495020	575620	H1 in turf; H ₃ (40)	charcoal, peatash, turf	after 1104	activity area
18	495110	575700	NA	peatash, charcoal	after 1104	activity area
19	494813	575370	NA	turf	modern	structure
27	494940	575500	NA	dung	modern	near modern barn
29	494950	575740	1766 (5); 1300 (16); H1 (22); H ₃ (32)	ash, charcoal	mostly after 1300, with some before and after 1104	activity area

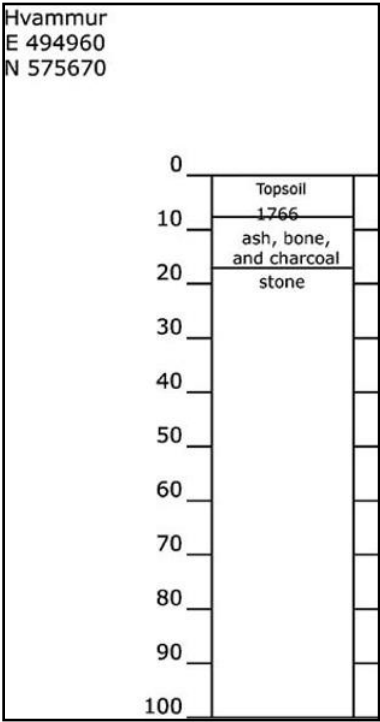


FIGURE 25
Profile of Hvammur core 6

The area is rocky and therefore difficult to core, so it is possible that older material lies beneath this stony horizon; however, in areas with moderately deep soils, only post-1300 cultural material could be found. Likewise, coring in and around the series of stone foundations revealed a very shallow, rocky sub-surface, making it difficult to date these features (see cores 18 and 19 in Table 15). The surface is littered with modern objects suggesting that these structures were used reused as middens within the last 50 years.

The grass field east of the farm mound (E494950/N575580, southwest corner) has been lightly plowed (roughly 5 cm) and flattened, but some cultural material remains (see cores 2–7, 17 in Table 15). Ash, charcoal, and small pieces of bone were found throughout the field (E494950-495020/N575600-670) directly below an in-situ 1766 tephra layer (see core 6 in Figure 25). The cultural layer averaged from 8–16 cm below ground surface, with highest concentration of material located in the northernmost end of the field (see core 17 in Table 15). In addition to these cultural deposits, two cores (3 and 17 in Table 15) revealed small pieces of turf with H1 in it (see core 3 in Figure 26). This suggests the material found is post 1104, but before 1766. I would argue the material

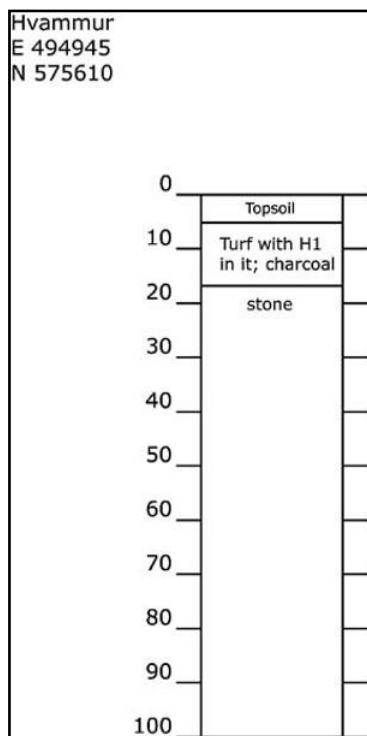


FIGURE 26
Profile of Hvammur core 3

was deposited just before 1766 given its close proximity to the tephra layer. One possible interpretation of this widespread cultural material is that they are a secondary deposition, spread on the field as a fertilizer. Mixing midden materials with dung is documented as a common practice in 18th–early 19th centuries and likely explains the data presented here.

The field just north of the farm mound (E494950/N575720) has not been plowed or flattened, and documents very little erosion as the H₁ (1104) tephra layer is preserved. The properties of the soil conform largely to dry silts, containing a small percentage of organic material. The coring survey revealed a small amount of cultural material below the H₁ layer, with a high concentration of charcoal between the H₁ and 1300 tephra layers as well as between the 11766 and 1300 tephra layers (see core 29 in Table 15 and Figure 27).

These data suggest some activity at Hvammur before 1104, but the degree of occupation increases proportionately over time, with the highest concentration of material deposited between 1300 and 1766. The very fact that any activity can be seen at Hvammur before 1104 is striking. This new evidence suggests that early landscape use in the valley included the creation of farmsteads as

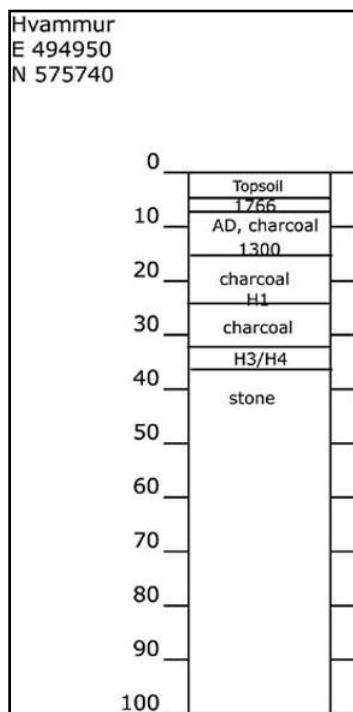


FIGURE 27
Profile of Hvammur core 29

well as activity areas, within the highlands as well as the midlands as we have seen at Hof and Kálfsstaðir.

5.4.6 Geitagerði

The site Geitagerði ('goat area') is located between Hólar and Hof on a high plateau (190 masl) overlooking the lower fields of Hólar and the Hjaltadalsá River. The landscape of Geitagerði is comprised of a small plateau situated in the foothills of the Ás mountain range to the northwest, and is surrounded by woodlands extending out from the birch forests around the site Hólar. As we have seen with its neighboring midland, the landscape ecology of Geitagerði is a mixture of a few higher-relief knolls with drier soils, surrounded by a sea of lower-relief wetlands. Unlike other sites in the area, however, Geitagerði has never been plowed with heavy machinery, nor have drainage ditches been constructed, but some site disturbance has occurred in recent years through the nearby construction of dormitories and a parking lot for Hólar University College. Today the site is used to graze animals, mostly horses, which are owned by the agricultural department at the college.

Geitagerði is a small site, only about a fourth of the size of Kálfsstaðir and Nautabú, and was likely never a permanent residence as census records

indicate that the lands were never used for full-time farming. Since Geitagerði was not considered a farm, its value was never assessed. Textual records indicate that the site was a *gerði*, an area of land enclosed by a permanent wall or movable fence for the explicit use of an owner or renter who lives elsewhere.⁴⁸ According to the texts, Geitagerði was owned and used exclusively by the Hólar Bishopric as early as 1550⁴⁹ and was later in the 19th century included as part of the Hólar land purchase when the bishopry was sold and made into a private farm. Little else was known about the site and no subsurface archaeological research had been done before my 2008 survey.

The goal of the coring survey at Geitagerði was to date the earliest occupation of the site, testing the hypothesis that the land was not used until it became a *gerði* to Hólar. The pedestrian survey noted a large knoll (E495130/N581425, southwest edge) at the site, and the visible remains of possibly two structures on top of the knoll. Just northwest of the knoll are the partial remains of the foundation of a small square feature. Lastly, west of the knoll are the visible remains of an enclosure wall, following the topographical circumference of the natural plateau. Near the southern edge of the enclosure wall are a series of three or four large rectangular features. Since Geitagerði is a small farm, systematic coring was conducted every 20 m across the entire site, covering an area of 1,800 m² (0.18 ha) to assess the environmental conditions of the site for all time periods. In addition, targeted 5 m-spaced coring investigations were carried out at all of the noted features and their immediate vicinity.

The geomorphology at the Geitagerði site is similar to other midland sites in valley, with erosion and waterlogging events characterizing modern environmental forces currently shaping the landscape. The rate of erosion, however, is moderate compared to sites like Hvammur, with the 1300, H1 (1104), and the prehistoric H3/H4 tephra layers largely preserved at the site, indicating that erosion was not a serious threat to the landscape before 1300. The 1766 tephra layer is, however, absent and the average topsoil deposition is roughly 6 cm, or 4 cm less than the average for Hjaltadalur. Since no plowing has occurred at the site, the absence of the 1766 tephra layer and sluggish topsoil growth may be the result of erosional patterns that have occurred within the last 200 years.

The coring survey confirmed that some of the features noted in the field survey are cultural. The area with the most significant activity is on top of a large natural knoll (70 × 30 m), where two structures made from stone and turf are preserved (see cores 1, 13, 14, 18, and 23 in Table 16 and core 13 in Figure 28).

48 Tetzschner (2006, 95).

49 The *Annals* (recorded in *Diplomatarium Islandicum*) mention that Bishop Guðbrandur kept his goats there, which may explain the name's origins.

TABLE 16 *Coring data from Geitagerði*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	495170	581460	NA	possible turf	after 1700	topsoil is shallow and 1766 tephra is missing – either erosion or the structure dates to after 1766
5	495150	581435	NA	dung	modern	mixed in the topsoil
6	495155	581490	1300 in turf	turf w/ 1300	after 1300	square structure still partially visible on the surface
13	495200	581480	1300 in turf	turf w/ 1300	after 1700	associated with structure seen in core 1
14	945190	581480	H3 in turf	turf	after 1700	associated with structure seen in core 1
17	495165	581420	H1 (16); H3 (35)	possible turf	before 1104	inconclusive, but if turf it is likely part of an enclosure wall well below H1
18	495190	581490	NA	turf	after 1700	associated with structure seen in core 1
23	495130	581450	NA	possible turf	ca. 1300?	below an aeolian deposit; if turf it is likely between 1300–1500

Structure 1, situated on the eastern side of the knoll (E495170/N581460), is approximately 20 m long, with at least three separate areas walled off by 5–10 cm of remaining in-situ turf. The floor of the structure is shallow and mostly stone. The layout of the structure and accompanying stone floor are typical of 19th-century barns. Further clues to its date come from the cores

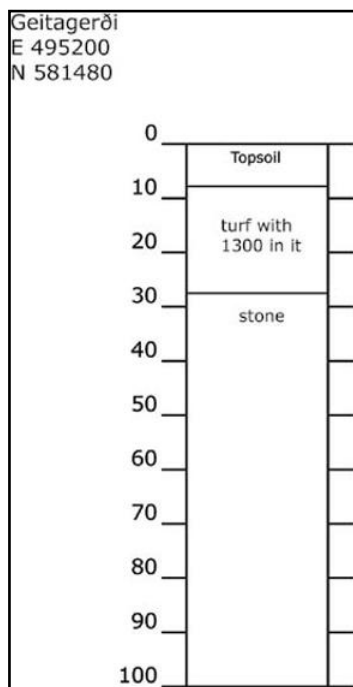


FIGURE 28

Profile of Geitagerði core 13

taken around the structure, which indicate that the structure itself sits on top of an in-situ 1300 tephra horizon. Likewise, the turf blocks that make up the walls contain layers of the 1300 tephra layer; surprisingly, the ubiquitous H1 tephra is absent. A tentative date for this 'barn feature' is post-1300, as determined by the tephra in soil profiles and in the turf, but given its design is likely to be far more recent than 1300. There is almost no topsoil deposition on top of the ruin (less than 3 cm), and while erosion is an agent of site destruction, the presence of 10 cm of preserved turf suggests that this structure is relatively modern, perhaps not older than 1800.

Structure 2 on the knoll, just west of the 'barn feature', is, however, significantly older. There are no clear walls visible on the surface, only a slight rise suggestive of a turf ruin. The coring profiles document clear turf in this feature that likewise contains the 1300 tephra layer. Unlike the previously discussed feature, however, this wall is 22 cm below ground surface, buried below a 12 cm topsoil horizon and a 10 cm aeolian horizon (see core 23 in Table 16 and Figure 29). The average rate of deposition at Geitagerði is 0.04 cm/yr, so it would have taken roughly 550 years for the 22 cm horizon to accumulate (without factoring in erosion), dating the structure to c.1450. It is reasonable to suggest that this feature dates to between 1300 and 1500, as the presence of the

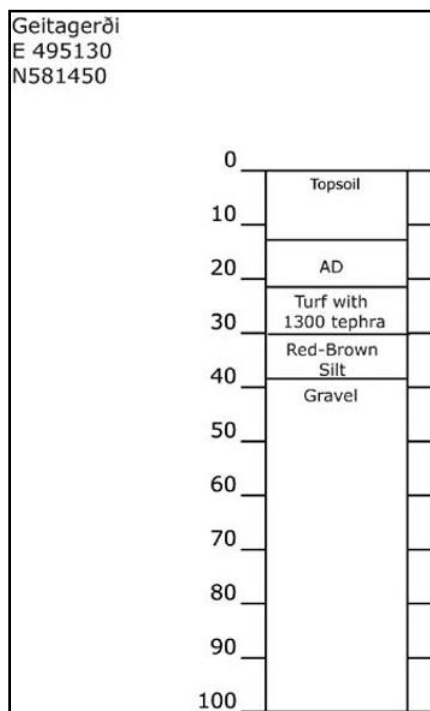


FIGURE 29
Profile of Geitagerði core 23

1300 tephra in the turf indicate that the feature could not be any younger. The extent of this structure is only 10 m, indicating that the turf is not part of a household, but is likely rather an animal enclosure.

Northwest of the knoll (E495155/N581490) are the visible remains of the foundation of a 12 m long square feature. The coring survey confirmed that the remains are cultural, documenting about 7 cm of preserved turf, 3 cm below ground surface (see core 6 in Table 16 and Figure 30). The turf here, as with the features on the knoll, contained the 1300 tephra layer, dating the structure to post-1300. The shallow deposition of the turf matches that of the large feature on the knoll, suggesting that the two structures were contemporaries. The shape and size of the structure is common of 18th-century *kvíar* (animal pens).

Coring carried out around the enclosure wall discovered some anomalies that might be cultural. A small mound (E495170/N581425) approximately 20 m east of the knoll is made up of relatively dry soils and an in-situ H₁ (1104) tephra layer. Along with the knoll, this is the only area at the site with dry silts; the surrounding area is a partial wetland with highly organic soils. The coring survey uncovered one area (E95165/N581420) with potential turf deposited well below the H₁ layer; however this was only seen in one core (see core 17 in Table 16) and

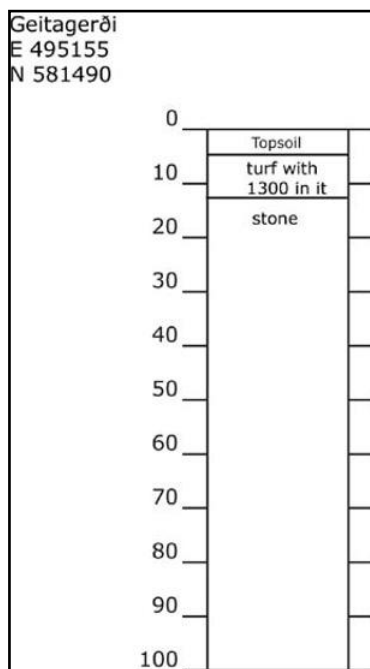


FIGURE 30
Profile of Geitagerði core 6

could not be confirmed by further coring in the immediate area. No other cultural material could be found in the area. On the other hand, a series of rectangular depressions was discovered to be located within 5 m of the enclosure wall; although no cultural material was found in or around these depressions, the right angles of the features are not likely natural. I suggest these depressions are the result of cutting turf for the nearby enclosure wall. Unfortunately, there were no indications of a possible date of either the enclosure wall or turf-cutting areas.

The survey from Geitagerði suggests that the land was not actively used until after 1300, and was likely only used for animal husbandry rather than as a residence. The archaeological data support the 'gerði hypothesis' of a late medieval date of occupation and a specialized economic use of the land.

5.4.7 *Kollugerði*

Kollugerði is located northwest of the site Hólar, and is situated within a low-relief basin (158 masl) in a valley carved out by two now extinct upland streams. The site is bordered by wooded hills on three sides and faces a modern paved road along its east–west axis. The site today has been disturbed by the construction of a modern road and an outdoor soccer field, used by a nearby

elementary school, along its eastern edge. While the site has not been plowed, two drainage ditches were dug with modern heavy machinery within the last ten years. The rest of the site, however, appears to be unharmed by modern construction. The fields at the site are used today as grazing land by the department of agriculture at Hólar University College.

Like Geitagerði, Kollugerði is a small site not mentioned in any early medieval texts; it is first mentioned in a 17th-century church diary that describes the area as a gerði owned by the bishopry at Hólar. The name 'kollu' suggests that the area was used for housing nursing calves or lambs, but no archaeological research had been conducted at the site prior to my 2008 survey to test this hypothesis. Kollugerði does not appear in any census records as its tax value was never assessed, indicating that the site was not likely to have ever been a full-time domestic farmstead; this interpretation likewise had not been previously tested.

The field and coring survey were done at Kollugerði to determine the environmental condition of the site before the modern era, to determine the earliest occupation and use of the site, and by extension to document the full range of activities that occurred at small midland sites like Kollugerði. The entire site was examined in the coring survey, covering an area of 12,800 m² (1.3 ha). Cores were systematically taken at 20 m spacing, with targeted coring at 2 to 5 m spacing in areas where cultural features were present.

The field and coring survey noted that the physical landscape of the site is predominately wet, made up of dense organic bog soils. Several streams and old river channels crosscut the site juxtaposed by a few small hillocks. The landscape demonstrates a similar erosional pattern as the one documented at Geitagerði, with the presence of H₁, but the absence of the 1766 tephra layer and sluggish topsoil accumulation, which on average is less than 5 cm. These data suggest that the landscape would have been significantly different during the pre-state period, with more soil deposition, but would have still been a wet area.

Culturally, the pedestrian survey noted the ruins of one u-shaped structure with an accompanying outer wall feature that enclosed a space roughly 15 × 20 m in area. Southwest of these ruins is a linear feature running east–west that has been truncated and flattened – possibly by heavy machinery, such as the type used in the construction of the nearby road. The subsurface coring survey revealed no cultural material apart from these three visible ruins. Target coring across the visible structure, which measured about 25 m in length, documented the presence of turf, 5 to 8 cm below the ground surface, but no other traces of cultural material were found in association (see cores 2–8 in Table 17). The turf is badly preserved and contains no traces of tephra, making the dating of the structure uncertain. No discernable floor layer could be distinguished,

TABLE 17 *Coring data from Kollugerði*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
2	492165	582280	NA	possible turf	unknown	livestock structure, likely after 1766
3	494140	582285	H1 (16); H3 (38)	possible turf	unknown	livestock structure, likely after 1766
4	494150	582290	H1 (13); H3 (28)	possible turf	unknown	livestock structure, likely after 1766
5	494135	582290	NA	possible turf	unknown	possible enclosure wall
6	494150	582230	NA	possible turf	unknown	livestock structure, likely after 1766
7	494160	582235	NA	possible turf	unknown	livestock structure, likely after 1766
8	494180	582240	NA	possible turf	unknown	livestock structure, likely after 1766
9	494135	582220	NA	possible turf	unknown	area has been flattened
10	494130	582215	NA	possible turf	unknown	area has been flattened

but a high number of large, uneven stones were detected. Structure of similar shape and with similar floors can be found in the 18th-century animal structures. The accompanying outer wall is frequently also associated with structures of this kind, used as a fence to keep animals within the enclosed area. These architectural features as well as the shallow deposition of the ruins suggest, as it did with the ruins at Geitagerði, of post-1700 date. The absence of any cultural material, such as ash or charcoal, along with the presence of a stone floor suggests the structure was intended for animals and that the structure was either used for a short period of time or was used seasonally.

Coring was also completed in and around the noted linear feature. The feature is likely a wall, that runs mostly northeast–west for 20 m (E494130–150/N582215–230) but the area has been heavily disturbed leaving few clues as to the use of the wall (see cores 6–10 in Table 17). The area around the wall is waterlogged and covered by thick deposits of gravel and stone. It is unclear

whether the wall was associated with a structure or was part of a boundary wall, but the curvature of the wall seems to follow the topography, suggesting a fence or boundary wall.

Data from the field and coring survey suggest that Kollugerði was likely never a farmstead, but was always used for housing animals. There is no evidence to suggest that the site was used at an earlier date than that indicated in the textual accounts. It is possible that the erosional and waterlogging events since the medieval period have erased traces of older structures and/or activity areas, but the evidence that remains suggest that the site was only used during the Early Historic period (1600–1800 A.D.).

5.4.8 *The Organization of the Hof Territory*

The data from the coring survey indicate that during the initial phases of settlement (see Figure 31), the Hof Territory was organized around an agrarian-based economy, evidenced by the establishment of at least one large midland farmstead at the site Hof (site type 1) and one smaller highland farmstead at Reykir⁵⁰ (site type 3). These data reflect a regional settlement strategy of establishing both large and smaller farmsteads in both highland and midland environments. New data presented here have shown that in addition to these two farmsteads, a number of specialized activity areas were also created as seen with the evidence from the midland sites at Hólar, Natuabú, and Kálfsstaðir, which all demonstrate cultural – but not habitation – activity before 1104 A.D. (see Figure 32). Evidence from the subsurface coring survey suggest that the nature of activity at Natuabú and Kálfsstaðir was defined by agrarian, livestock-rearing pursuits carried out with the building of animal structures and likely using the land for both grazing and for cultivating grass for hay-making. Further clues as to the nature of these activities can be gleaned from the names of these sites, which include the components ‘bú’ and ‘staðir’. Bú indicates an area of land used for storage, while staðir (the plural form of the noun staður) implies a site is was not a farmstead, but is instead part of a land claim of a farmstead located elsewhere.⁵¹ Taken together, the archaeological and textual analyses suggest that sites such as Natuabú and Kálfsstaðir were linked to other sites.

All of these data suggest that the two domestic farmsteads in the territory were raising a surplus of livestock well beyond the needs of their households.

50 Reykir, as mentioned at the start of this chapter, was not included in the survey study, but is described as a farmstead in early medieval texts. While future archaeological work is necessary to confirm these descriptions, Reykir is treated here based on our present understanding of the site.

51 Sigmundsson (1979); Tetzschner (2006).

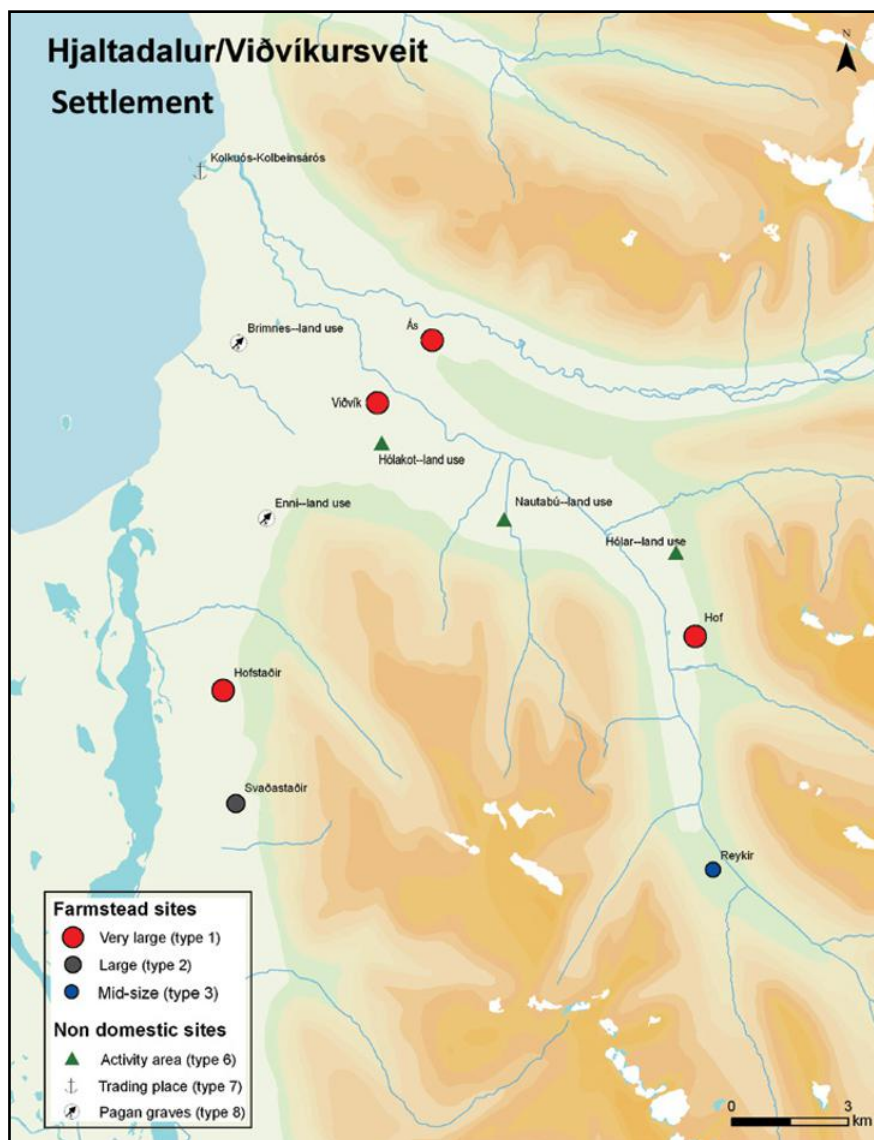


FIGURE 31 Map showing the distribution of sites during the Settlement period (870–1000 A.D.)

In a society dependent on livestock that had to be imported from abroad, commercial livestock production for local trade networks would have been a lucrative industry. Hof, the larger farmstead in the territory, is a good candidate for the territory's central place; what social network analysis might describe as a large hub connected to smaller nodes within a single landscape system.

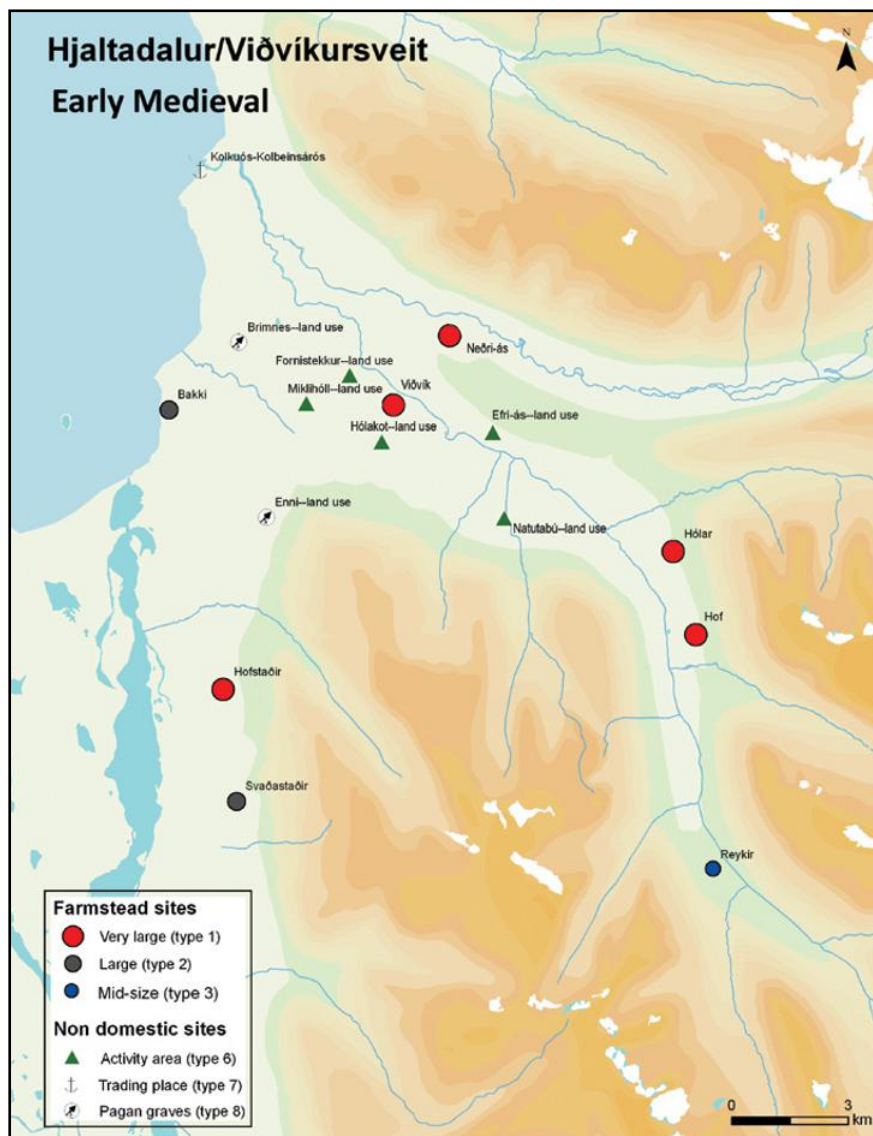


FIGURE 32 Map showing the distribution of sites during the Early Medieval period (1000–1004 A.D.)

If trade was an important part of the early Icelandic economy, it is likely that Hof played a role in forming and managing the requisite social networks. Reykir, on the other hand, represents a small highland farmstead that may have had some strategic value owing to its location. Reykir is the last unit of arable land before passing into the steep, rocky slopes of the Tröllaskagi Mountain, with navigable routes leading into the next fjord valley, Eyjafjörður.

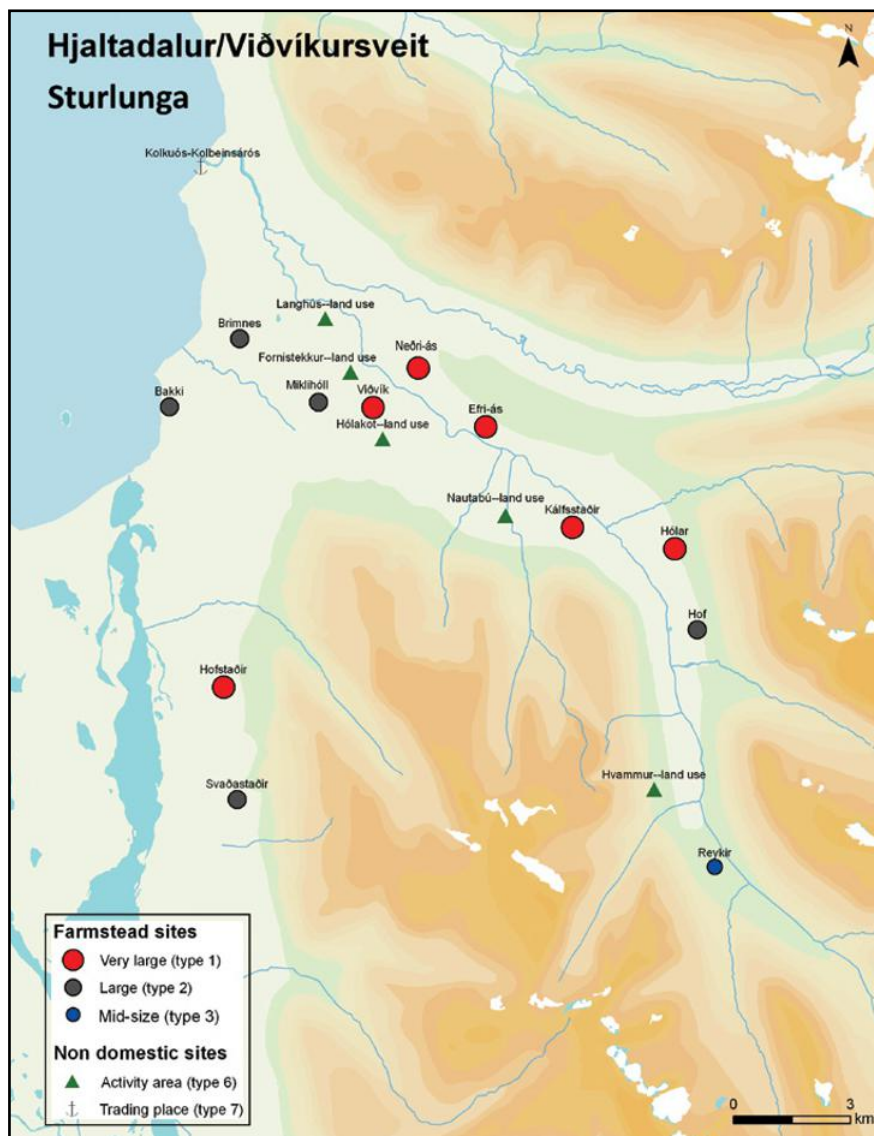


FIGURE 33 Map showing the distribution of sites during the Sturlunga period (1104–1300 A.D.)

The establishment of Reykir at this potentially crucial junction suggests that the dynamic social network seen in Hjaltadalur may have been linked to sites in other parts of Iceland as well.

By start of the Sturlunga period in 1104 A.D., both small and large sites had been established in the highland and midland regions of Hjaltadalur, indicating a hierarchical site organization (see Figure 33). As seen from the evidence

from the coring survey, these trends continue with the transformation of the midland Kálfsstaðir site from an activity area into a domestic farmstead. Hólar likewise first becomes a large farmstead (site type 1) shortly after the establishment of Iceland's northern bishopric. In addition to these new farmsteads, the activity area site at Hvammur was established. The evidence from Hvammur indicates that the site was being used for housing and grazing livestock. The creation of a new grazing site at Hvammur, and the intensification of farming practices seen at Kálfsstaðir and Hólar points to a heightened commercialized livestock economy that was contemporaneous with the first appearance of incipient state-level institutions in the 12th century (see Chapter 6).

After 1300, by which point Iceland is organized around state institutions, the organization of the Hof territory dramatically changes (see Figure 34). According to historical census records, no fewer than 19 new farmsteads, including Nautabú and Hvammur, are established (see Table 18). Of these 19 new farmsteads, all but two are located in the midlands; 16 of these sites fall into a site type category of 3 or 4. These data indicate that small midland farmsteads make up the majority of site types in Hjaltadalur after 1300. In addition to small farmsteads, eight gerði sites, such as Geitagerði and Kollugerði, are established for the use of the bishopry at Hólar, as well two sel sites (see Table 19). Evidence from the coring survey indicates that while sharing some characteristics, the Geitagerði and Kollugerði sites on the whole are strikingly different from the Nautabú and Kálfsstaðir sites – although Nautabú and Kálfsstaðir show little evidence of permanent farmsteads before the 12th century, these sites are much larger than Geitagerði and Kollugerði and document a wider range of economic activities. These data suggest that the organization of the economy, while always agrarian-based, was clearly different in the 12th century from what it had become by the 15th century (for a discussion of these economic shifts, see Chapter 6).

5.5 The Viðvík Territory

The Viðvík territory makes up an area of roughly 30 km² (3,000 ha) that begins at the coast, unfolding into a lowland (0–99 masl), broad, open plateau to the east and culminating with a midland (100–160 masl) landscape at the frontier of the mountainous Hjaltadalur valley (see Figure 14). Running east–west throughout the entire length of the territory is the Kolká, a glacial river that is fed by the Hjaltadalsá River.

The Viðvík territory is an area steeped in cultural significance as one of the first areas colonized in northern Iceland. The settlement farmstead at Viðvík is mentioned not only in the *Landnámabók* – the families that lived there are

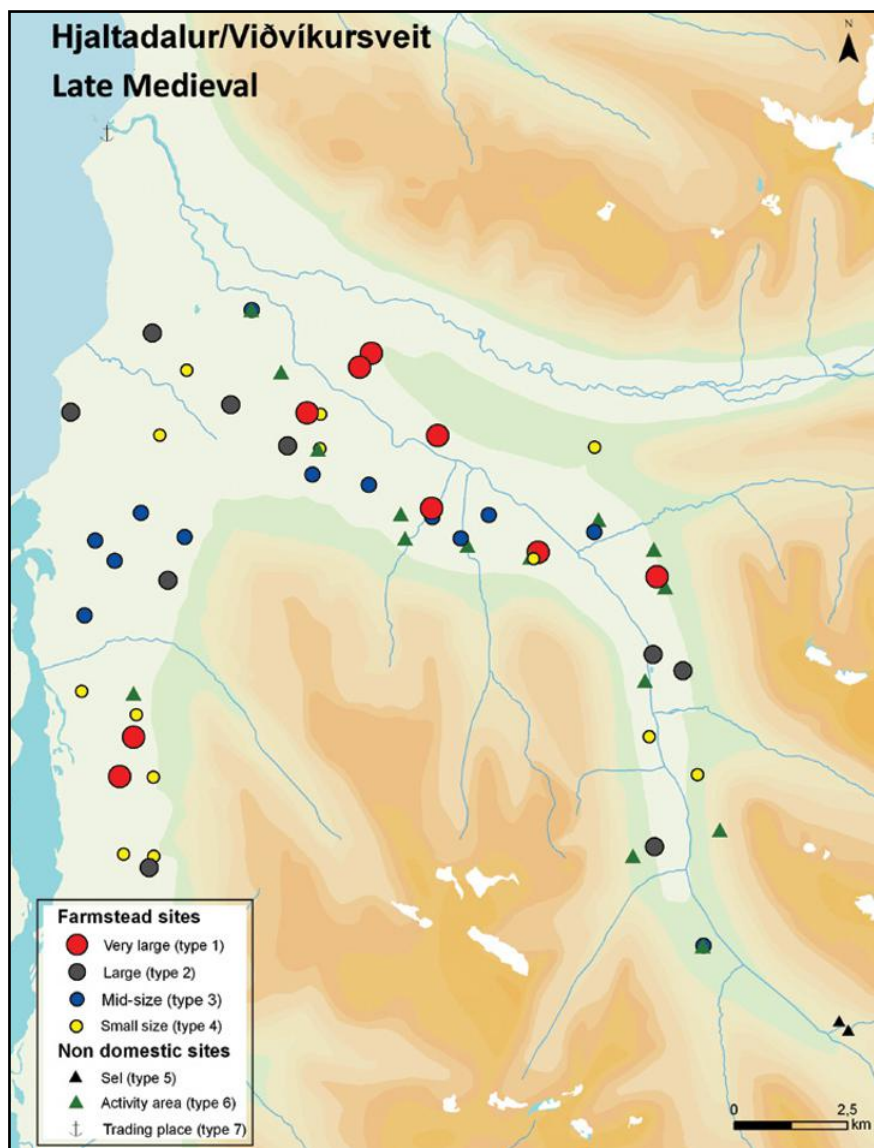


FIGURE 34 Map showing the distribution of sites during the Late Medieval period (1300–1600 A.D.)

described in numerous sagas as holding tremendous wealth and political power. The source of this power and influence was mediated by the flow of goods into and out of Iceland through the trading site at Kolkuós, where extensive archaeological research has provided new insights into the role of trade in the political economy of northern Iceland.

TABLE 18 Farmstead sites in Hjaltadalur over time

Farmstead	Tax value*	Size	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Áskot (M**)	<1	4					X	
Efi-Ás (M)	60	1		X	X	X	X	X
Garðakot (M)	20	3				X	X	X
Grafarkot (M)	<1	4					X	
Hagakot (M)	<1	4				X		
Hálsgróf (M)	<1	4				X		X
Hof (M)	50/60	1/2	X	X		X	X	X
Hólar (M)	>100	1	X	X	X	X	X	X
Hrafnhólar (H)	10	4				X	X	X
Hrappstaðir (M)	≈40	2				X	X	X
Huðarbak (M)	<1	4				X		
Hvammngerði (H)	<1	4						
Hvammur (H)	40	2				X	X	X
Ingveldarstaðir (M)	24	3				X	X	X
Kálfsstaðir (M)	60	2		X	X	X	X	X
Kjarvalsstaðir (M)	20	3				X	X	X
Nautabú (M)	20	3				X	X	X

Farmstead	Tax value	Size	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Ás/ Neðri-Ás (M)	80	2	X	X	X	X	X	X
Reykir (H)	30	3	X?	X	X	X	X	X
Rófa (M)	<1	4				X	X	
Settutófur (M)	<1	4				X	X	
Signýjarkofar (M)	<1	4				X	X	
Skúfsstaðir (M)	60	1				X	X	X
Viðnes (M)	20	3				X	X	X
Vólkuofar (M)	<1	4				X	X	X

* Tax Value is estimated in Danish Long Hundredths
** M = Midland; H = Highland

TABLE 19 Activity area sites in Hjaltdalur over time

Activity area	Type	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Efri-Ás (M)	Charcoal Making		X				
Fjárhúgerði (M)	Animal Husbandry				X	X	X
Fornasel (M)	Sel				X	X	X
Geitagerði (M)	Animal Husbandry				X	X	X
Gerðihús (M)	Animal Husbandry				X	X	X
Grænagerði (M)	Animal Husbandry				X	X	
Gjótgerði (M)	Animal Husbandry				X	X	
Herpisgerði (M)	Animal Husbandry				X	X	
Hvammur (H)	Animal Husbandry			X	X		
Kjálfsstaðir (M)	Animal Husbandry		X				
Kollugerði (M)	Animal Husbandry					X	X
Nautabú (M)	Animal Husbandry	X	X	X			
Reykjagerði (H)	Animal Husbandry				X	X	
Sauðasel (M)	Sel				X	X	

* M = Midland; H = Highland

Kolkuós is the site of a natural harbor that was intermittently in use from the time of settlement up through the 19th century,⁵² and was likely the point of entry for many of the first settlers colonizing the northern reaches of Iceland. In the medieval period, Kolkuós was an active market site, with the height of activity occurring between 1100 and 1400,⁵³ but the discovery of multiple pagan graves at the site, radiocarbon-dated to just before 1000, clearly indicates that the site was in use much earlier.⁵⁴ The site contains multiple features situated along a beach berm at the opening of the fjord valley where the Kolka River empties into the sea. This estuarine environment rich with several species of birds and fish no doubt was an added attraction to the seasonal merchants that set up camp here.

Landnámabók describes ships loaded with nothing but livestock arriving in Iceland via the harbor at Kolkuós. This reference hints at the potential market use of the site, as animals had to be imported to Iceland and were in high demand by settling households. The documentary evidence provides little else about Kolkuós until the 14th century, when the harbor comes under the exclusive use of the Hólar bishopric, supplying the church with luxury and ecclesiastical goods from abroad. By the 15th century, there is little mention of Kolkuós as a marketplace, but was at the very least used by the bishopric to dock their boats. In the 19th century, the harbor at Kolkuós was briefly revived, but has since gone out of use.

Archaeological investigations are our best source of information about the site. Kolkuós today is a high-risk site, as sea levels continue to rise, eroding away what is left of the archaeological remains from one of the main areas of the former harbor and trading place. Archaeological research began in 2002⁵⁵ and has since focused predominately on the at-risk sector of the site, a natural beach berm area covering roughly 360 m², but this area does not encompass the full extent of the site in medieval period. The excavations along the berm has uncovered ten to twelve small booths, all with the same orientation and bounded by a wall facing the sea running the length of the site. The floor layers inside the booths are well stratified, with multiple layers of sterile soil between cultural materials. These sterile layers are thin, and were likely deposited over

52 Kolkuós later became a small farmstead; today the site is abandoned.

53 Test trenches indicate at least 80 cm of cultural material. To date, the oldest layers of the site have only been excavated in a few areas.

54 Traustadóttir et al. (2004).

55 Ragnheiður Traustadóttir directs the Kolkuós excavation in conjunction with the Hólar Project. The excavations at Kolkuós were concluded in 2012. Traustadóttir and I are currently preparing a detailed edited volume of these excavations.

brief intervals of time. Their presence points to the conclusions that these booths, and therefore likely the site itself, was seasonally used. The booths, however, are not identical, with cultural material indicating that different types of activities were carried out at the site; for example, the floors of booths vary, with some made up of a stone paving, others only of soil. Likewise, the finds within the floor layers vary, from dense concentrations of slag to whale bones to ceramics. These data suggest that a number of different activities were performed at the site, including production and exchange as well as consumption.

Finds from Kolkuós consist of a combination of local and non-local commodities, but the majority are items from abroad, including but not limited to several categories of luxury goods: a variety of imported fruits and grains; ceramics from Scandinavia (11th century), Germany (12th century), and England (12th–13th centuries); silver coins from Germany (1080) and England (1180); several varieties of high-valued hunting and lap dogs; and two ivory combs from Norway (12th–14th centuries).

Taken together, these data clearly indicate that trade was an active pursuit in medieval Iceland. The data from Kolkuós demonstrate foreign goods entering the country, but what remained unknown, however, was whether goods were acquired from Iceland for commercial activities at both the local and global scale. The goal of the subsurface coring survey in the surrounding territory of Viðvík was to determine whether these pursuits were reflected in the overall landscape organization, and also whether the role played by trade was a minor one limited to everyday household activities or a major one in the shaping of the structure of the society. I conducted a subsurface coring survey in both the lowland and midland areas of the territory at the smaller sites of Hólakot, Fornistekkur, Langhús, and Miklihóll as well as at the potentially larger farmstead sites at Bakki and Hofstaðir to complement the existing archaeological data from Kolkuós and to examine these sites' dates of establishment and their economic organization. New test trench excavations were also opened at Hólakot to clarify the dating of the earliest phase and type of occupation at the site. These new data provide a complete picture of landscape organization in the valley, accounting for large and small sites alike, located in both lowland and midland environments.

5.5.1 *Hólakot*

The small site of Hólakot is located at the eastern end of the Viðvík territory, within 2 km of the site Viðvík and within 4 km of the site Nautabú. At 110 masl, Hólakot is at the lower end of a midland site, but represents a typical midland ecology with its rolling hills and a mixed vegetation of heath and scrub birch.

The area today is used for grazing by neighboring farms, but since the Hólakot farmstead was abandoned by the early 20th century, no drainage ditches or heavy plowing have been implemented at the site, resulting in the potential for a high degree of preservation of archaeological features. The southern end of the site exhibits minor surface damage resulting from heavy machinery that ran over the site during the modern construction of a paved road (route 767).

No fewer than 22 ruins dot the surface of Hólakot (see Figure 35), all of which have been recorded in a surface field survey (B. Zoëga 2005), but before my 2008 coring survey there had been no previous subsurface investigations to date any of these features. The history of the site, then, had been mostly pieced

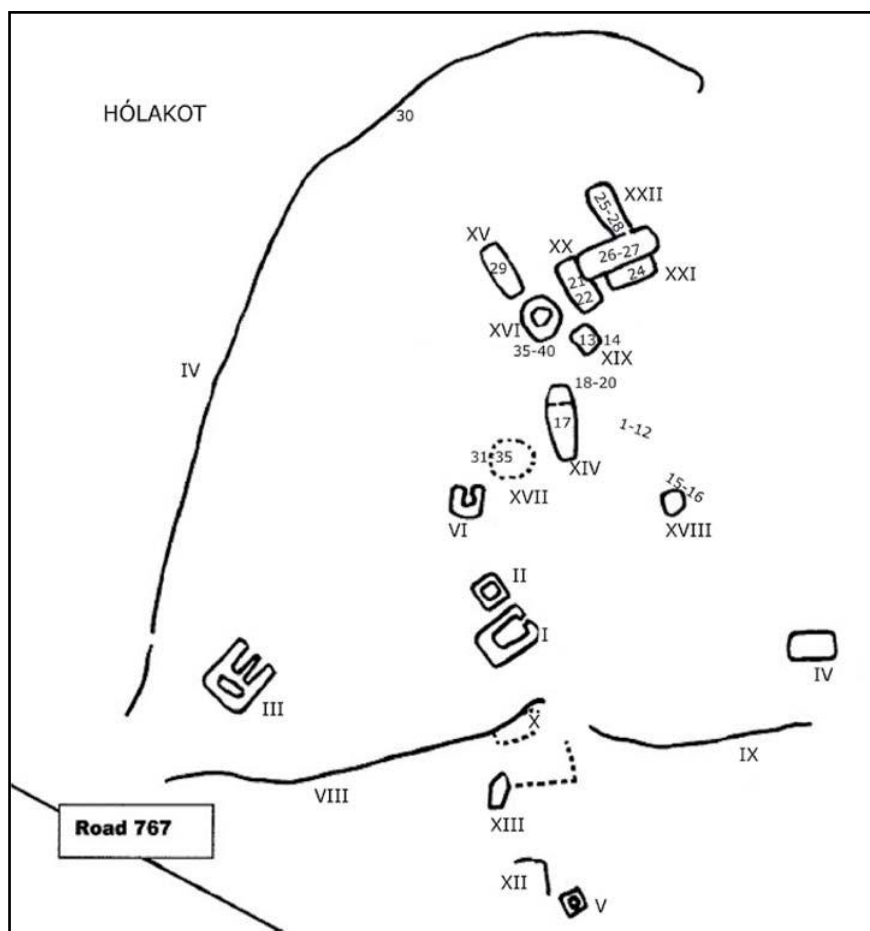


FIGURE 35 Map of Hólakot showing surface feature and coring survey

together using textual accounts. The first mention of the site is in the Hólar land inventory⁵⁶ of 1388, which lists Hólakot as one of the properties owned by the bishopric. The name 'Hólakot' can be interpreted as 'a tenant (kot) farm to Hólar (Hóla)', which has lead most researchers to assume that the site cannot predate the bishopric (1106). The land was assessed at less than one hundredth, making Hólakot a very small, type-4 farmstead. According to the *Jarðabók* census, Hólakot was an active farmstead from 1388 until 1702, when it was abandoned. In the early 20th century, Hólakot was briefly designated as a *húsmannsbýli* – a small land grant sponsored through community aid, given to a family in economic distress. Lands grants of this kind were usually only large enough to support a very small household, with two or three sheep or one cow.

The consensus prior to my coring survey was that Hólakot was established by the bishopric sometime between 1106 and 1388 when it was first recorded a tenant farm, and was abandoned by the 18th century with a modest revival in the early 20th century. Surface ruins were seen as a reflection of this history, with features 1–6 (see Figure 35) considered unmistakably occurring during the *húsmannsbýli* phase of the site. Covering an area of 2,000 m² (0.2 ha), the goal of my subsurface coring survey was to date the remaining surface features and to map any other traces of early landscape use at the site. Coring was done in two phases: a general 25 m spaced survey to gather geomorphological information for clues on the environmental history of the site, and a series of target coring investigations, with spacing at a range of 1–5 m, at all of the surface ruins to determine whether any part of the site predates the 12th century and, if so, to document the range of activities that had occurred there.

Geomorphological data collected through the general coring survey documented an environmental landscape marked by a series of low-relief hills comprised of dry but organic rich soils, surrounded by a matrix of semi-saturated wetlands to deep, water-filled bogs. Buried soil horizons below an in-situ 1300 tephra layer indicate that similar conditions would have prevailed in the medieval period, but it is clear that Hólakot on the whole is far wetter today than it has been in the past. The change in soil porosity is linked to changes in the underlying water table almost certainly caused by the cutting of a series of deep drainage ditches in neighboring fields on the Viðvík farmstead. These changes to the water table are also likely the result of widespread erosion in the nearby Ás mountain slopes and the subsequent creation of blanket bogs. The coring profiles suggest these processes occurred in multiple, distinct geologic episodes, with the most recent event occurring within the last 200 years as

56 Hólakot is listed as one of the properties owned by the Hólar Bishopric in the Hólastóll 1388, 1449, and 1550 land registries.

documented in the thin, water-saturated topsoil horizon. Archaeologically this change is illustrated by the sinking of parts of the enclosure wall running along the north side of the farm. Hólakot was an active farmstead until 1702; as it is highly unlikely that anyone would choose to build an enclosure wall through a bog, we can safely deduce that the wall was built sometime before the 18th century. It is possible that the farm was abandoned due to the encroaching wetlands, but the coring profiles also demonstrate a long history of waterlogging.

Target coring was done at each feature as well as in the areas surrounding the feature. Of the 22 documented features at Hólakot, those on the northern end of the farm, with rectangular plans and curved corners, are the most suggestive of an older, medieval style of architecture (features XIV–XXII in Figure 35). At this section of the site, cores were taken within a tight one-meter grid (cores 1–11 shown in Figure 35). The coring survey discovered that some of these features were actually natural rather than cultural. The most surprising was feature 18, a large mound that had been believed to be the midden at the farmstead, but turned out to be a glacial moraine. The subsurface coring survey also discovered that some features were younger than had been previously understood. Feature 16, a round, walled structure once believed to be part of the oldest phase of the farmstead was determined to be a modern animal pen (see cores 36–40 in Table 20).

TABLE 20 *Coring data from Hólakot*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	487570	584510	H1 (23); H3 (36)	charcoal, peatash	before and after 1104	activity area
2	487570	584515	H1 (23); H3 (30)	charcoal, peatash	before and after 1104	activity area
3	487575	584515	H1 (23); H3 (30)	charcoal, peatash	before and after 1104	activity area
4	487565	584510	H1 (32)	charcoal, peatash, wood ash	after 1104	more recent activity area
5	487570	585505	H1 (19); H3 (40)	charcoal	before and after 1104	activity area
6	487570	584520	H1 (23)	charcoal	before and after 1104	activity area

TABLE 20 *Coring data from Hólakot (cont.)*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
7	487570	584525	H1 (22); H3 (48)	charcoal, turf	before 1104	structure/activity area
8	487570	584530	H1 (24); H3 (40)	burnt bone, charcoal	before and after 1104	midden
10	487570	584540	H1 (24); H3 (45)	bone, charcoal, floor layer	before 1104	structure/activity area
11	487570	584545	H3 (23)	charcoal	after 1104	activity area
12	487570	584550	H1 (23); H3 (38)	dense charcoal	before 1104	activity area well before 1104
13	487565	584560	H1 (23); H3 (38)	charcoal	before and after 1104	floor of structure 19
14	487565	584568	H3 in turf	charcoal, turf	before 1104	structure 19
15	487587	584536	H1 (25); H3 (35)	charcoal	before 1104	little material – wind blown deposition
17	487560	584540	H1 (21)	charcoal, floor layer	before 1104	structure 14
18	487563	584550	H1 (23); H3 (40)	dense charcoal	before 1104	midden between structures 14 and 19
19	487562	584555	H1 (26); H3 (42)	charcoal, peatash, turf	before and after 1104	associated with structures 14 and 19
20	487565	584565	H1 (28); H3 (50)	charcoal	before and after 1104	little material – wind blown deposition
21	487560	584570	H1 (20)	light charcoal, turf	around or just after 1104	unclear, could be a structure or turf-cutting area
22	487560	584573	H1 (23)	turf?	after 1104	unclear, could be a structure or turf-cutting area
23	487570	584565	H1 (24)	charcoal, whetstone	before and after 1104	between structures 19 and 20; refuse from structure 19?

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
24	487570	584570	H1 (24); H3 (40)	charcoal	before and after 1104	between structures 20 and 21
25	487570	584575	H1 (32)	NA	before 1104	structure or turf cutting
26	487576	584580	NA	NA	before 1104	structure or turf cutting
27	487570	584590	H1 (16)	charcoal	after 1104	structure or turf cutting
28	487570	584580	H3 (63)	charcoal	unknown	“wall” of structure 22
29	487545	584570	H1 (21)	NA		structure or turf cutting
30	487520	584610	H3 (31)	stone	unknown	enclosure wall
31	487545	584530	H3 (29)	dung	modern	activity area
32	487540	584535	1300 (20); H1 (32); 1000 (37); H3 (42)	charcoal	charcoal before 1000	oldest known area of the site; feature 17
33	487540	584530	NA	stonecoal, dung	modern	activity area
34	487545	584530	NA	stonecoal, dung	modern	activity area
35	487550	584530	H3 (35)	charcoal, peatash	possibly before 1104	material sits on top of H3: early activity area
36	487550	584560	NA	stonecoal, dung	modern	structure 16
37	487550	584565	H3 (50)	turf (feature 16), stonecoal	modern	structure 16
38	487555	584560	NA	dung	modern	structure 16
39	487552	584562	H3 (13)	dung, charcoal	dung is modern; charcoal could be older	structure 16
40	487551	584561	H3 (20)	dung	modern	structure 16

Still others, namely features 14, 15, 20, 21, and 22, which have suffered the most damage from the raising water table, remain inconclusive (see cores 21–29 in Table 20); however, the profiles recorded from the coring survey all indicate that these features are cultural and represent the oldest occupational phases at the site. Beginning at the northernmost end of the site, feature 21 is a set of two adjoined, rectangular-walled ‘rooms’ running parallel to each other along an east–west axis. Features 20 and 22 are likewise rectangular and are adjoined to feature 20 perpendicularly on the western and eastern ends respectively (see features xx–xxii in Figure 35). The conjoined rectangular outline of features 20, 21, and 22 present the possibility that these three features were part of one architectural complex. A similar structural plan is exhibited at five other sites in Iceland, all of which have been interpreted as barns with storage rooms.⁵⁷ Cores were taken inside all three features on a one-meter grid. The core profiles consistently documented shallow, rocky horizons, devoid of the prevalent prehistoric H₃ layer found in nearly all other soil profiles recorded at the site. Interestingly, the H₁ tephra layer is preserved, suggesting that the absence of H₃ is not the result of erosion. Below the H₁ layer are stratigraphic bands of organic material in between layers of sandy silt typical of those deposited through water suspension.

My first interpretation of these data was that these areas represented places where turf had been cut in multiple episodes, allowing time between cutting for the deposition of sand and the regeneration of turf. I had attributed the pronounced clarity of the rectangular shapes to the process of water saturation that is currently underway at the site. To examine this hypothesis, test trench 1 (1 × 2 m) was placed perpendicularly through the eastern end of feature 22 (northwestern corner: E487576/N584580), capturing the raised section of the feature as well as a sample of the areas outside and inside the feature. Excavations from the raised area discovered below an in-situ H₁ horizon the outline of turf blocks fitted together. The patterned arrangement of the blocks of turf suggests that this feature is a wall rather than a cut made from turf extraction. The turf itself had no tephra preserved in it, preventing the dating of these walls to anything more precise than conclusively prior to 1104 A.D. Excavations from outside the feature discovered in-situ aeolian silt deposits with no cultural material present. In contrast, the excavation unit inside the feature uncovered a surface horizon made entirely of stones. Since the outside area had no stones present, those inside the feature likely make up a floor. Rocky floors of this type are well documented in medieval and modern animal structures. No other cultural material of any type was found in features 20–22.

57 Keller personal communication, July 2009.

Further excavations are necessary in order to test both the coring and test excavation data, but I can conclude that these features represent human activity that dates to before 1104.

From the walkover field survey, feature 14 garnered the most potential for an early structure. Its oval-shaped, single open-room architectural layout resembles those of known medieval longhouses.⁵⁸ While it is not typical for structures dating to the medieval period to be clearly visible on the surface, feature 14 unquestionably predates the 12th century. Coring profiles from feature 14 indicate a thin floor layer mixed with dense charcoal below an in-situ H1 (1104 A.D.) tephra layer (see core 17 in Figure 36 and in Table 20). Further excavation⁵⁹ is necessary to determine whether the structure is a household longhouse, but it

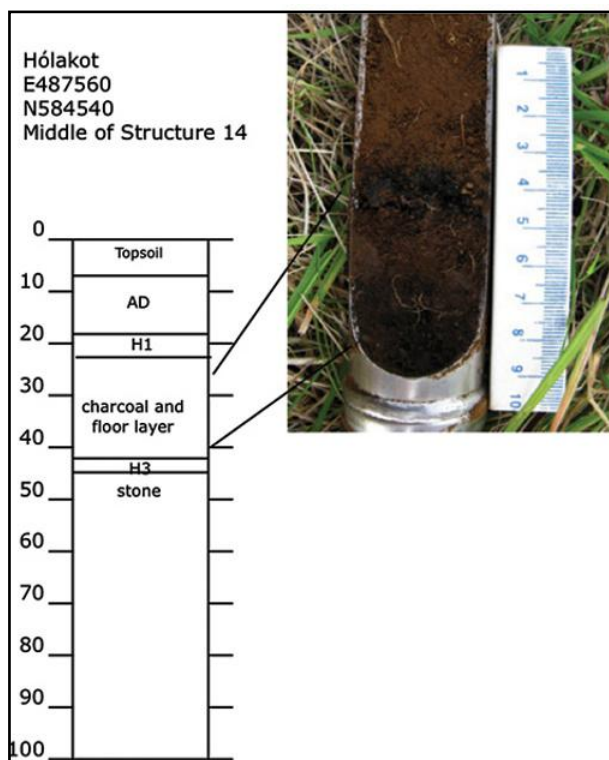


FIGURE 36 Profile of Hólakot core 17

⁵⁸ Sveinbjarnardóttir (1992, 23).

⁵⁹ Conservative coring was taken in Feature 14 in a conscious attempt to preserve the structure for future excavation.

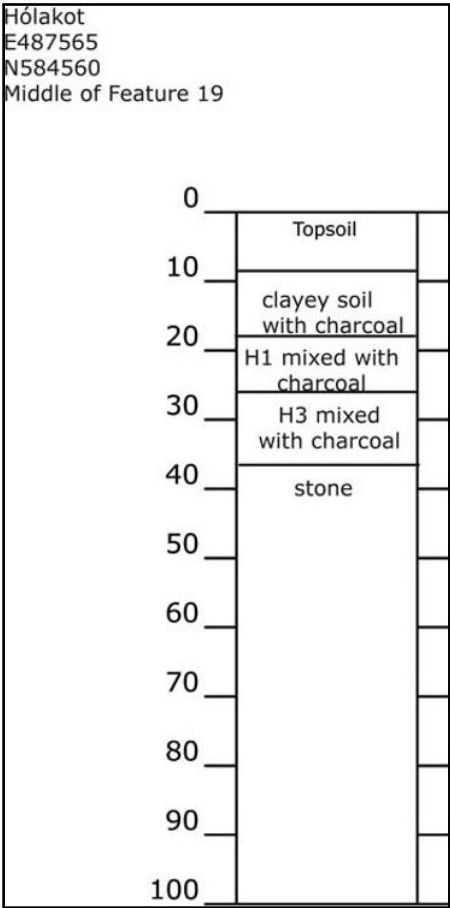


FIGURE 37
Profile of Hólakot core 13

is clear from the coring that the structure was not intended to house animals. The high frequency of charcoal and lack of soil accumulation layers between cultural material suggests a relatively long, permanent occupation rather than seasonal use. There is no cultural material above the H1 tephra layer, suggesting that the structure fell out of use after 1104 A.D.

Feature 19, a square sunken structure is located nearby and is contemporaneous with feature 14. As does feature 14, feature 19 contains dense concentrations of charcoal (see cores 13–14 in Table 20 and Figures 37 and 38) below the H1 tephra layer and floor layer containing numerous stones. In addition, feature 19 contains charcoal above the H1 layer as well as mixed with the in-situ prehistoric H3 layer. One core (see core 14 in Table 20 and Figure 38) was taken through the wall of the structure, providing some insight into the construction of the building. The wall is made up most of large blocks of turf, with midden

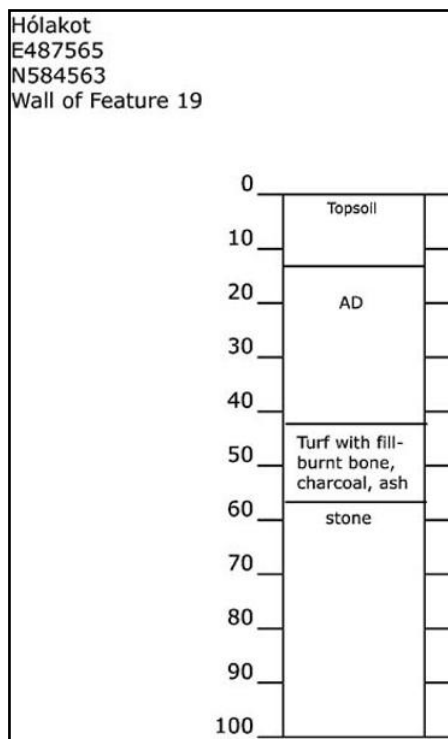


FIGURE 38
Profile of Hólakot core 14

debris, such as ash and small chips of bone, and sand filling in the void spaces. The turf itself sits atop a layer of stones. This construction is fairly common in Skagafjörður;⁶⁰ the techniques seen at Hólakot are found in over a hundred sites in the area and span at least thousand years. The turf itself may not offer specific clues of its age, but the 42 cm of topsoil and aeolian silt indicate the turf has been buried for quite some time. This indicates that the structure itself may have fallen out of use around the same time as feature 14 had and that the presence of charcoal mixed in with aeolian silt is a secondary deposition or as midden debris (see Figure 38). The area between the two features is consistent with the findings from each, characterized by dense concentrations of pure charcoal (see cores 1–12 and 18 in Table 20 and Figures 39 and 40). The charcoal appears to contain only burnt wood; there are no burnt bones or slag associated with the charcoal, meaning that the intended activity was likely for the purpose of either heating the structure or for making charcoal, rather than for iron-smelting or cooking. It is possible, however, that ironworking was performed near Hólakot.

⁶⁰ Sigurðardóttir (2008).

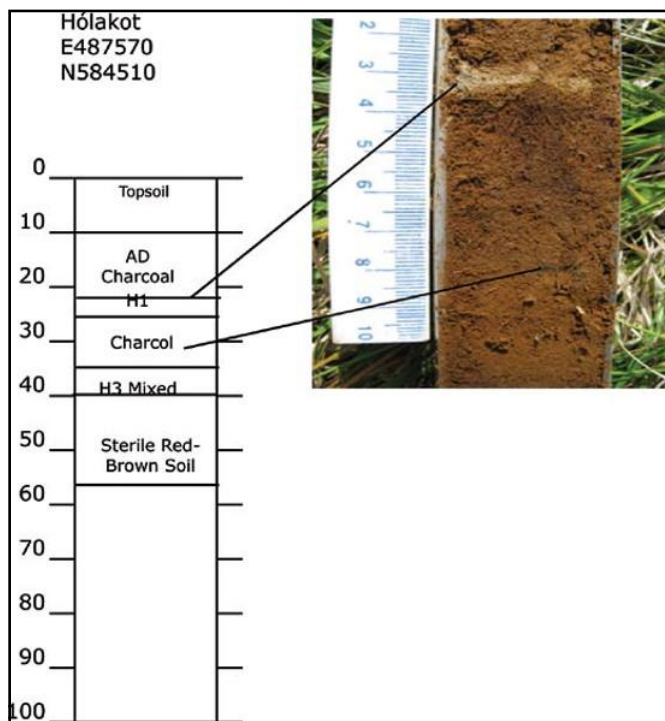


FIGURE 39 *Profile of Hólakot core 1*

These data suggest that feature 19 is likely a pithouse, perhaps predating but certainly contemporaneous with feature 14. The fact that charcoal is mixed with a prehistoric tephra layer suggests that the floor of the structure was dug down, using the tephra as a surface. This characteristic is common, as tephra makes for a dry, easily cleaned surface. Pithouses have been found at a number of sites, including the nearby site of Glaumbær, and have been interpreted as temporary structures intended for use in the interim while larger longhouses are being constructed. Because they are dug into the earth, pithouses are often small in size (typically 2–3 × 3–5 m) and require less turf overall. Considering that it can take up to two weeks for turf blocks to dry out before they can be used, the need for temporary structures is crucial. On the other hand, the data here suggest that the structure continued to be used alongside that of feature 14 and did not, as the ‘drying turf’ theory would suggest, fall out of use once the larger, ‘permanent’ structure was completed. It is possible that the function of the pithouse transformed over time, from temporary structure to activity area, but Ólafsson⁶¹ argues that while pithouses are always early, they were intended

61 Ólafsson (2006).

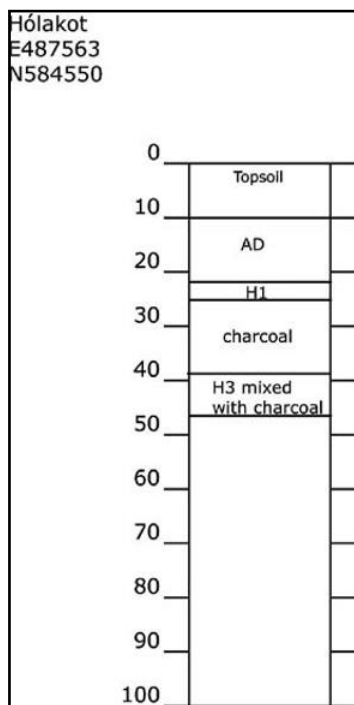


FIGURE 40
Profile of Hólakot core

to be temporary structures.⁶² Ólafsson has suggested that pithouses, which could be easily heated, were used as areas for spinning flax.⁶³ Working flax into thread and fabric requires warm conditions to keep the flax strands moist and flexible.⁶⁴ Once wool becomes the main cloth used and traded in Iceland and standing looms become more available, the necessity of pithouses diminished; unlike flax, wool does not require a warm environment for weaving into cloth. Many of these structures were reused as storage rooms or even middens. This

62 At the site of Hjálmsstaðir, radiocarbon dates suggest that the multiple pithouses on the farmstead were contemporaneous with the site's longhouse.

63 The sagas contain further support for this argument: pithouses are referred to as *dyngjur*, which is derived from the word for dung, perhaps because the structures with only a roof popping out of the ground resemble a dung pile. In one scene from *Gísla saga Súrssonar*, Gísslí pauses to rest up against a dyngjur and can hear the voices of women inside, eaves-dropping on their conversation as they continue to work.

64 Excavations of the pithouses consistently uncovered one or two ovens, numerous 'pin marks' in the floor, loom weights, spindle whorls, and lots of small stones. The holes could be from a weaving stick that weavers placed in the ground as they turned the stick to spin the flax. The stones, Ólafsson (2006) posits, were heated on the oven and used to heat the structure much in the same way saunas are heated today.

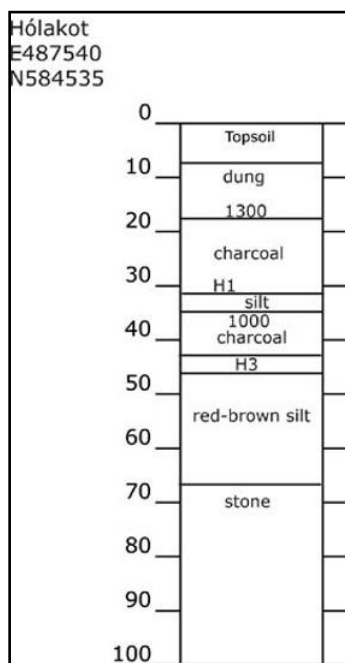
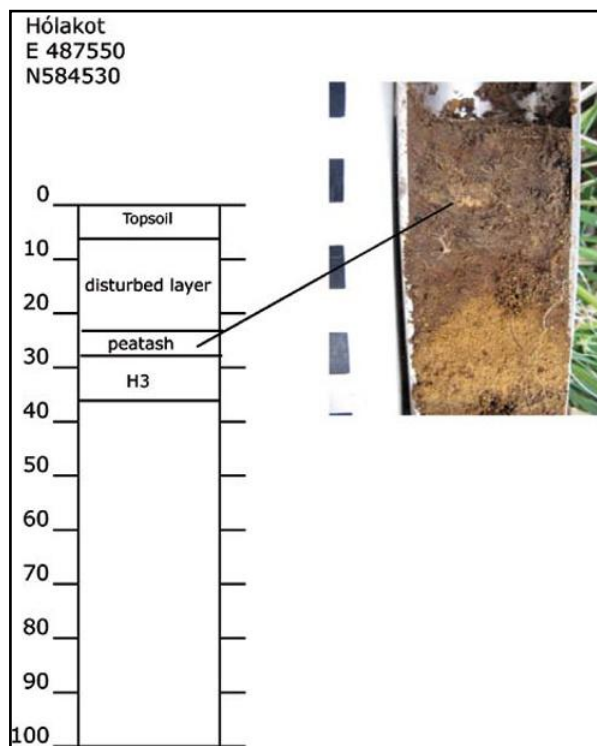


FIGURE 41
Profile of Hólakot core 32

model applies well to the data at Hólakot, perhaps explaining the concentrations of charcoal and multiple stones on the floor surface. It may also explain why the structure appears to cease activity after 1104 – by 1050 homespun fabric made of wool had become the main cloth of the country.

Associated with features 14 and 19 is feature 17, a round structure barely visible on the surface (see cores 31–35 in Table 20 and Figure 35). Coring profiles from feature 17 document scant but tantalizing evidence of charcoal below what appeared to be an in-situ V ~ 1000 tephra layer (see core 32 in Table 20 and Figure 41). The preservation of the area, however, is poor and has been truncated by later 18th- and 20th-century constructions (see feature VI in Figure 35). The uppermost layers of the core profiles from the feature are consistent with the faint but visible surface traces of an animal pen, with large amounts of dung as well as worm-eaten soils consistent with highly fertilized soils. Below these deposits, however, are layers of charcoal and peat ash below an in-situ H1 layer, which would date the cultural material to before 1104 (see Figures 41 and 42).

Since the area is truncated, it was difficult to assess through coring profiles whether there was an older occupational phase predating the modern animal structure. Secondly, the V ~ 1000 and H1 tephra horizons were faint, making it difficult to date the cultural material to before 1104 or 1000 A.D., or to determine whether the cultural material was a secondary deposition, truncated by

FIGURE 42 *Profile of Hólakot core 35*

the later animal strictures in the area. To investigate whether an older feature was present, test trench 2 (1 × 1 m) was placed perpendicularly to the northern end of feature 17 (northwestern corner: E487540/N 584535). Throughout trench 2, charcoal was present below an in-situ V ~ 1000 tephra layer. One small block of turf (8 cm in length) was also uncovered in the northern end of the excavation unit below an in-situ H1 tephra layer. However, the area overall was poorly preserved, leaving only faint traces of structural material behind. The evidence, however faint, is intriguing and points to the early Settlement period for the occupational phase of the site, predating the textual record by at least 200 years.

The defining characteristic of features 14 and 19, as well as the area surrounding them, is a high frequency of charcoal. If Hólakot was an early farmstead, it is likely that the charcoal was used as part of everyday household routines, from cooking to spinning flax. Further excavations of feature 14 are needed to accurately address whether this structure was used as a domestic longhouse. If this feature was a domestic structure, then it was a relatively small one, which could be an indication that its use was ancillary to some type

of specialized economic activity area connected to a larger farmstead. While charcoal often indicates ironworking, there is no other evidence, such as peat ash or slag, to support this interpretation; however, this does not preclude the possibility that Hólakot is representative of earlier ironworking techniques – it might be that charcoal was being produced for ironworking in a separate location. Likewise, features 20–22 seem to indicate the housing of a potentially large number of animals. If Hólakot had been home to a small or seasonal household, it is unlikely that such a household could maintain large numbers of animals without some kind of outside assistance.

The new archaeological data from Hólakot indicate that the site was used during the Settlement period, well before the 12th-century establishment of the Hólar bishopric. The name Hólakot could have been only a later designation for the site, or it could be a reference to the multiple low hills (*hólar*) located on the small farm (*kot*). The pre-state activities seen at Hólakot include the possibility of craft production (weaving flax) as well as storing large numbers of animals at a small site with little evidence of full-time domestic occupation. For example, there is no midden present at the site, only dense clusters of peat ash and charcoal. These archaeological data seem to point to Hólakot's association with – and perhaps even dependence on – a larger, presumably neighboring farm, providing us with some clues as to how the landscape was organized in the pre-state period.

5.5.2 *Fornistekkur*

Fornistekkur is located northwest of Hólakot and due west of Neðri-Ás, close to the Hjaltadalsá River. At 83 masl, Fornistekkur is a lowland site posited within the broad geographic plain that extends out towards the coast. Like other lowland sites, the vegetation coverage at the site is consistent with a wetland ecology made-up of sedges, patches of berry plants, and large amounts of naturally occurring peat within shallow, gravel bog soils. Today, the land is used for grazing animals by neighboring farmsteads.

The site at Fornistekkur does not appear in the documentary record until the late 18th century when it was recorded that a very small tenant (*hjáleiga*) farmstead, assessed at less than one hundredth (site type 4), was in operation there. Census records indicate that the family who lived at the Sleitustaðir farmstead, located in the neighboring valley of Kolbeinsdalur, owned the land at Fornistekkur. The name of the site, 'old (*forn*) sheep milking house (*stekkur*)' suggests the practice of raising sheep or other small domestic livestock at the site. While it is assumed that the land must have been used before the 18th century in some fashion, there were no indications of any early occupation in the texts, and no previous archaeological research had been done at the site

prior to my 2008 coring survey. The goal of my survey was to determine whether the land was being used prior to the 18th century, and if so, what types of activities were being carried out there. Research at Fornistekkur began with a general field survey, followed by subsurface coring investigations, covering the entire extent of the site, with an area measuring 3,945 m² (0.4 ha).

The field survey noted the surface ruins of a modern, currently disused animal structure (stekkur) with a north–south orientation (E486565/N586760), as well as the remains of an enclosure or boundary wall with an east–west orientation (E486585/N586815), with the latter located on top of an older mound feature. Below the mound feature, the surface is wet, suggestive of water-saturated, organic, rich soils. From the field survey, it was unclear whether the mound was naturally or culturally formed, or whether any other phases of use were present at the site. The coring survey was therefore organized along two separate strategies: a general survey on a 25 m spaced grid aimed to collect data on the environmental conditions at the site and to prospect for any other locations of cultural activity, and target coring on a 2 to 5 m spaced grid at areas that documented cultural material, including the area around the visible surface ruins.

Data from the general coring survey provided information on the evolution of environmental conditions at the site. Coring below the mound indicated that the area has been wet since well before the time of settlement, but there is also evidence of erosion at the site that is the result of more recent activity, such as the construction of drainage ditches in neighboring fields has and resulting changes to the water-table levels. Nonetheless, the medieval environment of Fornistekkur would have been mostly wet, aside from the drier oasis found on the large mound feature (E486600/N586760). The mound feature is natural, not cultural, and is made up of drier, silty but still organic, rich soils. The high organic content indicates that at some point in its history, the mound area, typically of a wetland environment, was submerged underwater. Drier soil horizons are found below the mound area, above an in-situ H₁ (1104 A.D.) tephra layer indicating that by 1104 A.D., the mound area was substantially drier than its surrounding area. This may explain why no cultural material was found away from the mound.

Targeted coring was carried out at the two primary visible features of the site: the stekkur and the enclosure or boundary wall. The stekkur (E486560/N586740), measuring 15 × 8 m, is built from stone and turf, with a rectangular structural plan subdivided into two parts: one large area for housing the animals and a separated, walled smaller area in the back used for storing hay. This architectural design was commonly used in the 17th through the early 20th century, and is frequently found among the ruins of old turf structures throughout Skagafjörður today. It is likely that the turf used in its construction was

taken from the surrounding wetland, since the turf is similar in both locations. Although the ruin is mostly stone, what little turf remains contains three distinct tephra horizons: Landnám tephra in one profile, and more widely represented layers of the 1104 and 1300 tephra layers. The shape of the structure along with the presence of 1300 tephra suggests the structure was likely built in the 17th or 18th century, and perhaps continued to be used with the aid of repairs throughout the 19th and early 20th centuries. Inside the structure some charcoal was discovered, but the dominant feature found was a stone floor and traces of both hay and dung. The charcoal may be related to a later use of the site, when Fornistekkur was a small farmstead in the 19th century.

The coring survey uncovered an older structure not visible on the surface located within 5 m north of the visible ruins (see cores 28–31 in Table 21). The

TABLE 21 *Coring data from Fornistekkur*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
3	486560	586740	Landnám and H1 in turf	turf	after 1104	livestock structure
4	486565	586740	1300 in turf	turf	after 1300	associated with core 3, making the structure after 1300
5	486570	586745	1300 in turf; H3 (31)	charcoal, turf, floor layer	after 1300	livestock structure
6	486580	586740	H1 (19)	possible turf cutting	before 1104?	evidence of cutting with an in-situ H1 above the cut
7	486580	586750	H1 in turf	turf	after 1104	livestock structure
8	486580	586760	1766 (6); H1 (27); H3 (39)	charcoal	before and after 1104	activity area
14	486585	586815	NA	enclosure wall	unknown	likely dates to the medieval period
15	486590	586810	NA	enclosure wall	unknown	likely dates to the medieval period
19	486590	586770	1766 (6)	turf?	before 1766	more recent structure
20	486590	586760	1766 (6); 1300 (14); H1 (23); H3 (35)	turf?	before 1104	more recent structure

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
28	486575	586755	1300 (32); H1 (57); H3 (72)	turf w/H1	before 1300, after 1104	older animal structure north of existing ruins
29	486570	586755	1300 (40); H1 in turf; H3 (72)	turf w/H1	before 1300, after 1104	older livestock structure north of existing ruins
30	486565	886755	H3 (75)	turf	before 1300, after 1104	older livestock structure north of existing ruins
31	486565	586760	1300 (22); H1 (34); H3 (55)	charcoal, turf w/H1	before 1300, after 1104	older livestock structure north of existing ruins
32	486570	576760	1300 (19); H1 in turf; H3 (60)	charcoal, turf w/H1	before 1300, after 1104	activity area
33	486575	586760	1300 (17); H1 (32); H3 (40)	charcoal	before 1300, after 1104	activity area

uppermost horizons of the profile appear to be disturbed, and may in fact be the result of the construction of the still partially standing stekkur at the site, indicating that these two structures were not used contemporaneously. Below these disturbed horizons are in-situ layers of turf containing multiple H1 (1104) tephra layers. An in-situ 1300 tephra layer, dating the structure to sometime after 1104 but before 1300, caps the turf itself (see core 31 in Figure 43). In addition to turf, a small amount of charcoal was found in association with the structure along with dung and hay. The exact nature of the structure remains to be determined through broader excavations, but the dominant presence of hay and dung make it likely that this structure was intended to house animals. Traditional wisdom would suggest that the presence of an enclosure wall indicates the boundary of a household occupation. The logic behind this assertion is that there is no need to invest materials, time, and labor into constructing an enclosure wall around anything but a household; however, this logic does not seem to hold up against archaeological scrutiny. Aside from a small amount of charcoal, there is no further evidence of household activity. In fact, the targeted coring survey determined that aside from these two non-contemporaneous animal structures, no other cultural material can be found within the enclosure wall.

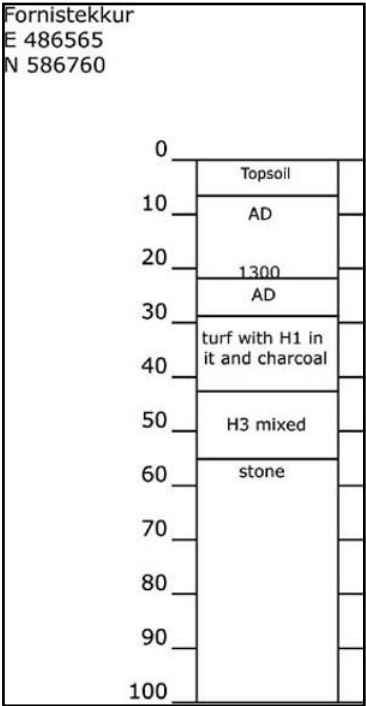


FIGURE 43
Profile of Fornistekkur core 31

Target coring was also performed along the partially visible enclosure wall, built along the circumference of the mound. The enclosure walls off a space of about 200 × 100 m in area. The primary building material is stone, mixed with some turf and debris; as there were no associated tephras with the feature, the exact date of the wall remains somewhat elusive. It is likely, however, that parts of this wall date to the construction of the older animal structure. Clues for this date can be traced back to the partially standing stekkur, which is aligned both within the enclosure wall as well as in relation to the older structure. It can be interpreted that the positioning of the recent stekkur was done with an existing enclosure wall in mind.

The potential use of the wall is all the more instructive. The presence of an enclosure wall is often interpreted that a site was domestic farmstead, but this logic cannot be applied to Fornistekkur. Regardless of when it was erected, the wall unquestionably was used in association not with a household, but with an animal structure, challenging our assumptions about the significance of the presence or absence of enclosure walls at a site. This discovery raises the question of what motivations could have been behind fronting the costs of building such a large enclosure wall around an animal structure. One possible

motivation is that if the structure was used to house nursing animals, the wall could have been built to keep these fledglings out of the wetter and potentially dangerous areas of the site. A similar type of wall was found at Kollugerði, but there the walled area was only 15×20 m making the Fornistekkur wall unusually large. A second, but not contradictory, explanation for constructing a wall of this size is to advertise ownership over the area of land it encloses.

Data from the subsurface coring survey reveal two surprising results: first, the land at the lowland site Fornistekkur was in use by the Early Medieval period (1000 A.D.), well before it is mentioned in the documentary record; and second, the presence of an enclosure wall at a non-domestic site provides us with new insights into how the pre-state landscape was organized. In a property system governed heavily by usufruct – the necessity to claim rights over lands – the presence of a wall serves the same purpose as the presence of a domestic structure: ‘this land is mine’. It is noteworthy that a lowland-wetland area would have been so coveted as early as 1000 A.D. and also that the area seems to have been used for specialized agrarian activities only.

5.5.3 *Langhús*

Langhús (76 masl) is located in a broad, open plateau at the mouth of the Hjaltadalur sector of the valley to the south, and within a few kilometers east of the coastal harbor at Kolkuós. Like Fornistekkur, the landscape is consistent with a lowland ecology, comprised of a vegetation of heath, scrub birch, and bog soils visible on the surface. While much of the area is wet there are multiple dry oases on top of at least nine mound features at the site. Today Langhús has been renamed Ásgarður, and is an active horse farm. At the time of the 2008 survey, construction of a new house was nearing completion. The new house was deliberately placed at a remove from the ruins of an older farm mound, but it is possible that the construction did disturb other subsurface archaeological features. Overall, however, site preservation is excellent as plowing and drainage ditch-digging at the site have been minimal.

Langhús is not mentioned in the documentary record until the 18th century, when it appears in census accounts as a small- to average-size farmstead (site type 3) assessed at 20 hundredths. Langhús was an active farm until a brief hiatus in the mid-20th century, documented in the visible ruins of turf structures dating from the 18th through the early 20th century. A history of the use of the farm during the Historic period is still maintained in the social memory of living individuals in the area, who remember the family and the farmstead from their childhood. The name of the site – meaning ‘longhouse’ – has long puzzled local cultural historians, as the construction of longhouses was a practice of the early settlers, not of 18th-century farmers. Due to its name, it

has been assumed that the site must have been in use earlier than the 18th century; however, prior to my 2008 coring survey, no subsurface archaeological research had been conducted at the site. The goals of my survey were: to gather information on the evolution of environmental conditions at the site; to date the visible surface features at the site; to locate any material traces of an older phase of occupation; and to outline the potential range of economic activities occurring at Langhús. My research began with a complete field survey of the site, followed by a program of general and targeted coring investigations that covered an area of 16,000 m² (1.6 ha).

The field survey identified nine mound features, four of which had visible turf ruins on the surface. The current landowner informed me that these ruins were from the early 20th-century farmstead. The turf feature on mound 1 (E486073/N587741) was a stable; on mound 4 (E438055/N587643), a barn; on mound 5 (E486076/N587597), a burned-down storage room; and mound 9 (E485993/N587617) was the last household farm mound before the current owners bought the land. There were no visible ruins on mounds 2, 3, 6, 7, and 8. The field survey identified no visible surface features away from the mounds.

A general coring program spaced at 25 m was conducted with the goals of identifying any subsurface features and of reconstructing past and present environmental conditions at the site. Geomorphological data collected through the general survey revealed that the environmental setting at the Langhús site conforms to an average lowland ecology, with a mix of drier silty soils alongside areas with dense, clayey organic rich bog soils. Buried paleosols below the 1300 and H1 (1104 A.D.) tephra layers indicate that these conditions were present during the medieval period as well the modern era. The general coring survey also determined that all 9 mound features are natural glacial moraines made-up of silts and glacial gravel. Lastly, the general coring survey identified one potential area of cultural activity, not visible on the surface, located in the lower-relief area between mounds 5–7.

Targeted coring on a 2 m spaced grid was conducted on all nine mounds to date the visible ruins and to investigate the presence of any older ruins. Targeted coring on a 1 m spaced grid was also conducted within the area between mound features identified in general coring survey. Targeted coring in mounds 1, 4, 5, and 9 determined that the visible ruins date to no earlier than the Historic period. The dating of these structures was calculated through both tephrochronology and soil accumulation rates. For example, the remains of a horse barn (E486080/N587740) in mound 4 consisted of turf containing multiple 1300 tephra layers, dating the turf-cutting to post-1300. A stone floor with dense concentrations of both dung and hay (see cores 2 and 3 in Table 22) was found in association with the turf walls, buried directly under a topsoil

TABLE 22 *Coring data from Langhús*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
2	486080	587740	1300 in turf	ash, charcoal, hay, turf w/1300 and H1 in it	after 1300 – modern	livestock structure, still partially visible on the surface
3	486080	587742	H3 in turf	hay, turf w/H3 in it, wood	modern	livestock structure, still partially visible on the surface
10	486055	587682	NA	turf	modern	structure
13	486055	587645	1766 (8); 1300 in turf	turf w/ 1300	between 1766 and 1300	structure
14	486055	587635	NA	charcoal, hay, turf	between 1766 and 1300	livestock structure
16	486055	587595	H1 (21); H3 (30)	charcoal, peatash, peat	around 1104	activity area
17	486055	587600	H1 in turf	burnt turf w/H1 in it	after 1104	iron-making area
18	486056	587600	H1 in turf; H3 (41)	burnt turf w/H1 in it, charcoal, peat	after 1104	iron-making area
19	486057	587600	NA	burnt turf, charcoal, peatash, peat	after 1104	iron-making area
20	486058	587600	NA	charcoal, turf	after 1104	iron-making area
21	486055	587599	H3 (37)	burnt turf, charcoal, peatash, peat	after 1104	iron-making area
22	486055	587598	Landnám and H3 in turf	burnt turf w/ Landnám and H3 in it; dark floor layer	probably after 1104	iron-making area

TABLE 22 *Coring data from Langhús (cont.)*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
23	486055	587597	NA	dark floor layer	probably after 1104	iron-making area
24	486055	587601	H1 in turf	burnt turf w/H1 in it, charcoal, peatash	after 1104	iron-making area
25	486055	587602	H1 in turf	burnt turf w/H1 in it, charcoal, peatash	after 1104	iron-making area
26	486054	587600	H3 (36)	burnt turf w/ H3 in it, charcoal	probably after 1104	iron-making area
27	486053	587600	NA	dark floor layer, peatash, turf	probably after 1104	iron-making area
28	486052	587600	NA	burnt turf, dark floor layer	probably after 1104	iron-making area
30	486030	587600	H3 (40)	charcoal	probably before 1300	activity area
31	486065	587620	H1 (32); H3 (41)	charcoal	before and after 1104	activity area

horizon. The average rate of topsoil deposition is 8 cm or 0.033 cm/yr and the average depth of cultural deposition for these areas is between 10 and 15 cm, dating the majority of these ruins to the 17th century at the earliest.

Coring on mounds 2 ((E486078/N587709) and 3 (E486052/N587686) uncovered disturbed soil horizons with faint traces of charcoal. Deep tire tracks were found in some areas of these mounds, indicating that the disturbance was likely the result of heavy machinery running over the site during the construction of the modern household. Coring profiles taken from mounds 6 ((E486006/

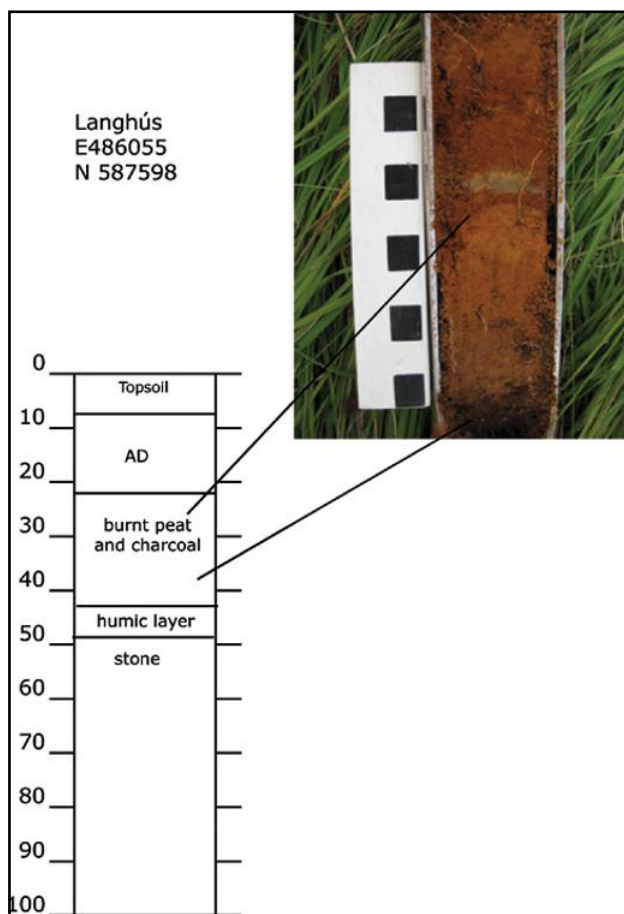


FIGURE 44 *Profile of Langhús core 18*

N587587), 7 (E486030/N587536), and 8 (E486001/N587540) found glacial soils with no traces of cultural material of any type.

The general coring survey revealed a previously unknown activity area at the site (E486055/N587600), roughly 7 m long by 2 m in width, characterized by a dense concentration of peat ash, charcoal, and burnt turf all sitting atop a small platform of stones (see cores 17–28 in Table 22 and core 18 in Figure 44). Coring profiles were taken in a tight one-meter grid to determine the overall extent of the material as well as the function of the activities present. The exact nature of this activity remains unclear, but comparisons with other sites would strongly suggest ironworking; for example, the site of Ormsstaðir in northeastern Iceland has a similar feature that measures roughly 7.5×2 m, likewise consisting of peat ash, charcoal, and burnt turf in association with numerous

stones.⁶⁵ One crucial find at Ormsstaðir was the presence of a dark humic layer associated with dense charcoal and ash – the humic layer has been interpreted as floor material used in the construction of a furnace.⁶⁶ The area at Langhús likewise is made up of these characteristics. At the base of core 22 (Figure 45) is a dark humic floor layer packed around burnt peat and charcoal, in association with turf blocks discovered about a meter away as seen in cores 23 and 24 (Figures 45 and 46) – a likely interpretation for this feature is a furnace that was part of an ironworking area. The turf itself provides some clues as to the

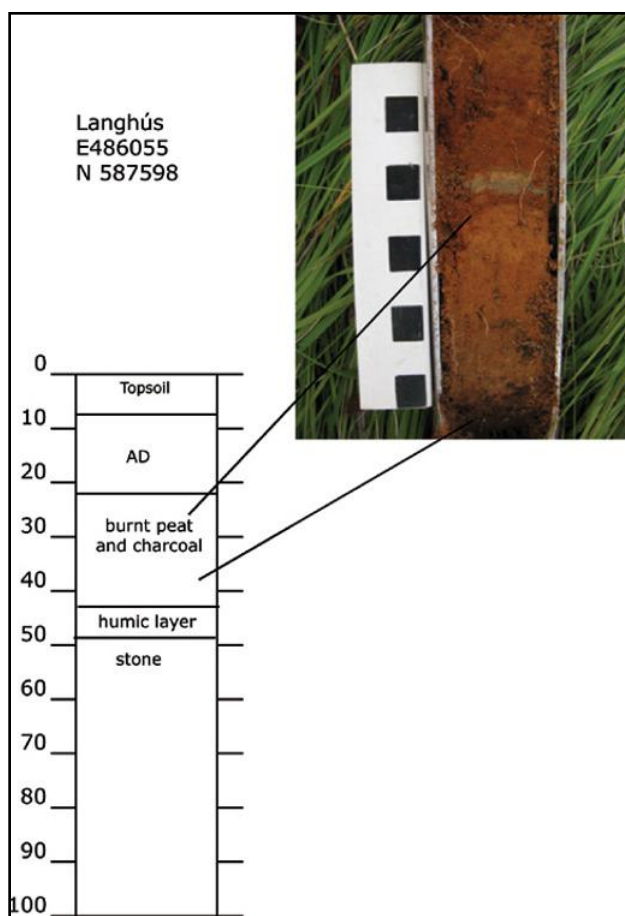


FIGURE 45 *Profile of Langhús core 22*

⁶⁵ Friðriksson and Hermanns-Auðardóttir (1992, 8, 14).

⁶⁶ Smith (2005, 199).

date of the ironworking area: almost all of the turf uncovered contained numerous H1 (1104) tephra layers, dating to post-1104. Unlike other cultural material discovered at the site, the ironworking deposits were not close to the surface; for example, the horse barn materials seen in cores 2 and 3 are located about 15 cm below ground surface. For the ironworking area, the cultural layers average about 23 cm below ground surface. With an estimated 0.033 cm/yr of soil deposition, it is likely that these materials date to before 1400 with a high probability of dating between 1150 and 1350.⁶⁷ The timing of these activities, as discussed below, is crucial to our overall understanding of the political and socioeconomic development of Hjalatadalur.

The geological make-up of Langhús is ideal for ironworking: one upside to a wet area is the availability of bog iron ore; likewise, the openness of the area

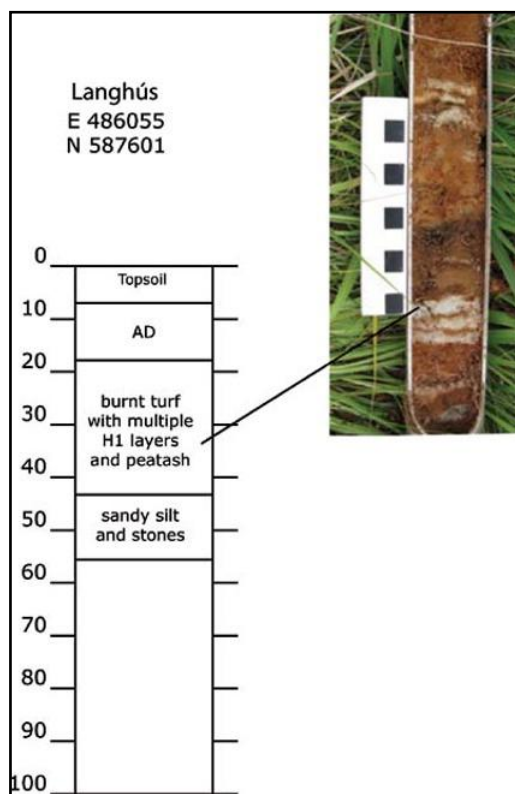


FIGURE 46 *Profile of Langhús core 24*

⁶⁷ A sample was taken for radiocarbon dating but has not yet been analyzed.

may have provided strong winds to aid in iron production. The discovery of a potential medieval iron-producing workshop in Iceland is rare. While finds of ironworking debris such as peat ash are not uncommon, only a handful of workshop sites have been uncovered; of those few sites, no intact furnace has been found.⁶⁸ There is no clear understanding of the iron-smelting techniques in medieval Iceland or even of the scale on which ironworking was carried out. The number of potential sites may in fact be relatively low: by 1550, iron production ceased in Iceland, supplanted by iron imported through Hansa merchants.⁶⁹ Historians' customary view is that ironworking was rarely carried out in Iceland even before the 16th century owing to the poor quality of the local bog ore and the lack of available wood necessary for making charcoal. The saga writers themselves, who occasionally made reference to the inferior quality of iron in Iceland, sharpen this view; for example, the flow of a battle mentioned in *Eyrbyggja Saga* is interrupted while one of the men pauses to bend his sword back in place using his foot.⁷⁰ Contrary to these opinions, however, studies have shown that conditions for ironworking were extremely favorable on the island.⁷¹ Iron sources are plentiful as the bedrock is almost entirely basalt, a rock with high hematite content that can be extracted in the form of bog iron.⁷² The hindrance to ironworking, therefore, was not from mining the ore, but from producing the large quantities of fuel necessary to reach the high temperatures required for the smelting process.⁷³ Vésteinsson and Simpson have argued that instead of wood charcoal, medieval Icelanders routinely used peat and turf as sources of fuel for industrial ironworking,⁷⁴ an interpretation corroborated by the data from Hofstaðir in northeastern Iceland, and now from Langhús. At the elite farmstead of Hofstaðir, Vésteinsson and Simpson discovered that massive quantities of peat ash had been burned at high temperatures (above 800 °C), suggesting that peat was used in industrial iron-smelting. In contrast, smaller quantities of wood ash had been burned at low temperatures (below 400 °C), suggesting that wood was used a domestic fuel for cooking and heating the longhouse. In fact, a stratigraphic profile from the site reveals that the earliest levels of the site, dating to

68 Smith (2005, 187–189).

69 Friðriksson and Hermanns-Auðardóttir (1992, 9–10).

70 “So then befell a great battle, and Steinthor was at the head of his own folk, and smote on either hand of him; but the fair-wrought sword bit not when as it smote armour, and oft he must straighten it under his foot” (*Eyrbyggja saga*: Chapter 44).

71 Friðriksson and Hermanns-Auðardóttir (1992).

72 Espelund (1991); Tylecote (1987).

73 Vésteinsson and Simpson (2004).

74 Ibid., 181–184.

Landnám, show a preference for peat over wood and that it is not until the 18th century that wood becomes the preferred source of fuel. This discovery contradicts many scholars' assumptions that wood had always been the preferred fuel and, I would suggest, opens the door for investigations of intensified iron production.⁷⁵ Peat, unlike wood, was not a scarce resource; however, it was a resource not found locally throughout the island, suggesting that it could have been controlled. This may explain why Langhús was occupied, but does not explain why the land remained unused until after 1104.

The answer to this question can be explained by the location of the workshop. Throughout the Settlement period the sagas make reference to itinerant metalworkers available for seasonal employment at a household's open-air smithy (*smidja*) during the summer months. By the 11th century, however, open-air smelting areas are replaced by permanent, closed, indoor smithies (*raudasmidjas*). Indoor smithies, while susceptible to burning down, has the advantage of allowing for metalworking to be carried out in the winter as well as the summer months.⁷⁶ This shift in setting may suggest an increased need to control and manage ironworking, and dovetails well with the changes we see in property rights, farmstead organization, and the increase of competition and violence in the Sturlunga period.

The subsurface survey at Langhús found no evidence that Langhús was a farmstead until the Early Historic period, but also revealed previously unknown cultural activity at the site during the Sturlunga period. Unlike activity-area sites in the Hof territory that focused on agrarian production, the evidence from Langhús demonstrates that the land was a site of specialized craft production (ironworking), suggesting a variation in economic strategies throughout the Hjaltadalur-Viðvíkursveit valley.

5.5.4 *Miklihóll*

Miklihóll (105 masl) is located at the entrance to the protected valley system of Hjaltadalur, about 4.5 km due south of the Langhús site. The physical landscape is dominated by two natural plateaus (117 masl), each with an east-west orientation and roughly 150 m in length by 50 m in width. These features may explain the name Miklihóll ('big hill'), and as with other sites at this elevation, the midland ecology is marked by higher-relief hills within a low-relief wetland landscape. A small stream with water colored red due to its high concentration of bog-iron ore and peat marks the eastern boundary of the site. To the west, the site faces a modern paved highway (route 76). Miklihóll was an active farm

⁷⁵ See Dobres (2000) on the social impact of technological changes.

⁷⁶ Friðriksson and Hermanns-Audardóttir (1992).

in the 1960s, documented by the still standing ruins of turf structures and cement foundations; while drainage ditches have been dug at the site, plowing activities have been minimal. Today the lands at the Miklihóll site are used as grazing fields for the equestrian department at Hólar University College.

Miklihóll first appears in the documentary record⁷⁷ in the Hólastóll 1388 land registry, listed as one of the properties of the bishopric. The land at Miklihóll was assessed at 40 hundredths, making it a fairly large (site type 2) farmstead until the site was abandoned in the 1960s. It has been assumed that the land was not actively used before the 14th century, but no previous archaeological research to test this assumption had been conducted at Miklihóll prior to my 2008 survey. The goals of the subsurface coring survey were to reconstruct both modern and medieval environmental conditions, to date all visible features, and to identify any previously unknown features at the site in order to reconstruct the history of land use at Miklihóll.

The field survey identified the 1960s farm mound on the southern plateau (E485600/N585625) of the site, with modern cultural material, such as a ceramic bathtub and sink, littering the surface. Dense mounds of household garbage and the remains of domestic structures cover the entire area, ruling out the possibility of further subsurface coring. The northern plateau (E485700/585650) in contrast contained the visible remains of only three small structural ruins, all made of turf and stone, and all likely to be animal structures associated with the 1960s farmstead. The surrounding lower-relief areas of the site have no visible archaeological features aside from a modern drainage ditch. Even with this deep ditch, the lands in the lower relief areas are heavily waterlogged, with extensive sedge vegetation. From these findings, the coring survey was organized into two strategies: a general 25 m spaced survey covering 16,500 m² (1.7 ha) to gather environmental information and to identify any possible subterranean archaeological features; and a program of targeted coring to date the occupational use of the three turf structures on the northern plateau and to investigate any additional features identified during the general coring survey.

The general coring survey identified a predominately wetland environment in the lower-relief areas of the site, comprised of bog soils with high concentrations of iron ore and peat. Clayey, textured soils mixed with black sand typify the geomorphology of the area, with slow soil accumulation and erosion rates. The 1300, H₁, and H₃/H₄ tephra horizons are well preserved across the site, allowing for the relative dating of these environmental conditions. As wet as

77 Miklihóll is likewise mentioned as a one of the Hólar Bishopric properties in the later Hólastóll 1449 and 1550 land registries.

the area is today, buried paleosols indicate that the entirety of the lower-relief stretches of the site would have been partially submerged, characteristically of a bog environment, throughout the medieval period. In contrast, dry silts and large stones dominate the geomorphology of the plateaus. As with other hill features throughout the valley, the Miklihóll hills are likewise the product of glaciation. The dry conditions prevalent today would have also been present in the medieval period. Overall, the Miklihóll environment, like so many other sites in the valley, is a land of contrasts with dry hills transecting extensive boglands.

Archaeologically, in addition to the three known ruin structures, the general coring survey on the northern plateau identified two older features not visible on the surface (see Table 23). Target coring on a 5 to 10 m spaced grid

TABLE 23 *Coring data from Miklihóll*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	485725	585510	H3 (37)	charcoal, dung	modern	activity area
3	485705	585515	H1 (21); H3 (30)	charcoal	after 1104	activity area
4	485710	585510	H1 (21); H3 in turf; H3 (37)	possible turf w/H3 in it	before 1104	livestock structure
5	485700	585500	H1 (21); H3 (38)	charcoal	before 1104	activity area
9	485700	585525	H3 (38)	dung	modern	activity area
10	485690	585520	H3 (40)	dung	modern	activity area
11	485680	585515	H1 (19); H3 (40)	charcoal	after 1104	activity area
12	485695	585535	NA	stonecoal	modern	activity area
13	485690	585540	H3 (23)	charcoal, dung, stonecoal	modern	activity area
15	485690	585585	H1 (19); H3 (33)	dung	modern	activity area
18	485700	585620	1300 (13); H1 (21); H3 (37)	dung, peatash, charcoal	dung – before 1300, charcoal and peatash before 1104	activity area
19	485705	585600	H1 (20); H3 (30)	charcoal, dung	before and after 1104	activity area

TABLE 23 *Coring data from Miklihóll (cont.)*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
20	485710	585575	1300 (14); H1 in turf; H3 (35)	dung, turf, peatash, charcoal	dung – after 1300; turf – before 1300, before 1104; charcoal and peatash before 1104	livestock structure
21	485700	585570	1300 (15); H1 (21); H3 (38)	charcoal, dung, peatash	dung – after 1300; charcoal before and after 1104	activity area
22	485710	585560	H3 (35)	dung	modern	activity area
23	485690	585565	H1 (21); H3 (37)	dung	modern	activity area
24	485650	585615	H1 (21); H3 (33)	dung	modern	activity area
25	485615	585530	H3 (38)	dung	modern	activity area

was undertaken at each of these features. As suspected, the surface ruins are modern animal structures that sit atop an in-situ 1766 tephra layer, dating these structures to some time after the 18th century. The architectural plan of these features corroborates the relative dating, with distinctive 18th- through 20th-century styles of construction.

On the eastern side of the northern mound (E485710/N585510), feature 1, an area with preserved turf blocks below an in-situ H1 tephra layer, was discovered during the general coring survey (see cores 4 and 5 in Figures 47 and 48 and in Table 23). Target coring on a 5 m spaced grid determined that the turf contained the prehistoric H3 layer – a common characteristic of the turf used in the construction of early medieval structures. Associated with the turf was a small amount of charcoal along with a dense concentration of dark organic material, likely decomposed hay, as well as dung. No other cultural material was uncovered, indicating the structure was not a household. The overall preservation of the area is poor, however, inhibiting any further research on the shape and function of the possible structure.

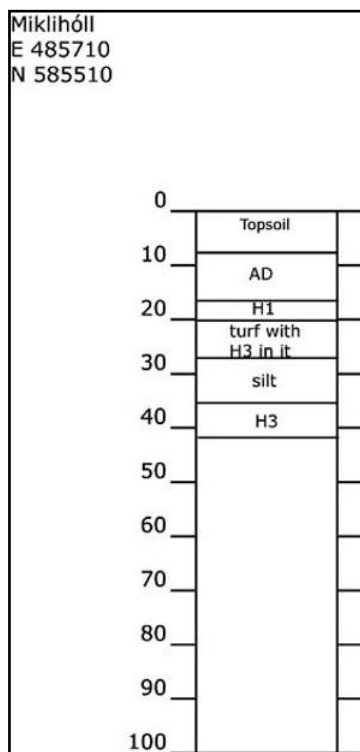


FIGURE 47

Profile of Miklihóll core 4

In contrast, feature 2, located on the western side of the northern plateau (E485700/N585620), is situated in an area with little erosion and excellent preservation. Target coring was done on a 10 m spaced grid and consistently documented profiles with in-situ 1300 and H1 tephra layers (see cores 18–21 in Figures 49–51 and in Table 23). Charcoal, peat ash, and dung were discovered below both the 1300 and H1 tephra layers, indicating the continuous use of the area, with an increased intensity of use after 1104. The high frequency of dung and hay likewise indicate the area was used for housing and grazing animals, with occasional or seasonal caretakers at the site as indicated by the charcoal and peat ash; no traces of structural material, such as turf, were found.

The coring survey pushes back the earliest known occupational date at Miklihóll by more than 200 years. The landscape organization and economic practices seen at Miklihóll document the same pattern as that of the Langhús and Fornistekkur sites: little to no human occupation before 1104 followed by substantial non-domestic use between 1104 and 1300.

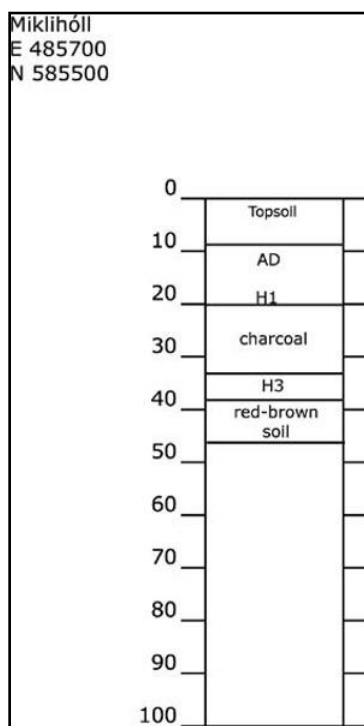


FIGURE 48

Profile of Miklihóll core 5

5.5.5 *Bakki*

Bakki is a coastal settlement located on an open bluff at 39 masl, roughly 6.5 km south of the medieval harbor at Kolkuós. The vegetation is sparse, consisting predominately of heath with some scrub brush. The surface is somewhat rocky indicating an aggressive erosional regime at the site. Today the farm is called Gröf, and is one of the most active and large farmsteads in the valley. A significant amount of modern construction has taken place at the site, including the digging of extensive ditches.

Bakki is mentioned in a few medieval texts, including the Reynistaður land inventory from 1295 A.D., which lists the land at Bakki as one of the properties owned by the Reynistaður cloister. The farmstead at Bakki appears again in the Hólastóll 1449 A.D. inventory⁷⁸ as one of the properties belonging to the bishopric. In the 18th century, the *Jarðabók* mentions that the farmstead at Bakki was once also the site of a *bænhús* ('prayer house') but the structure was no longer in use. The lands at Bakki were assessed at 50 hundredths, making

⁷⁸ Bakki is listed as a property owned by the bishopric in the Hólastóll 1550 land registry as well.

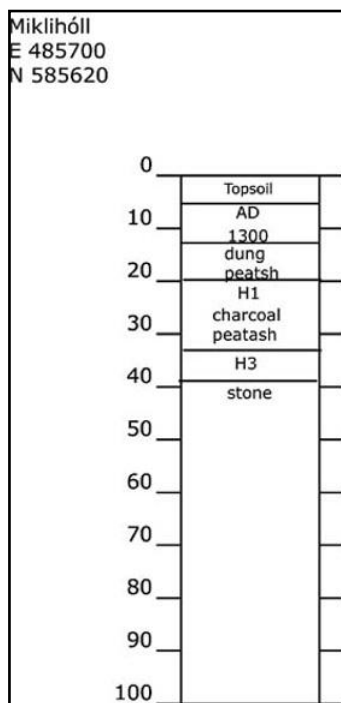


FIGURE 49

Profile of Miklihóll core 18

Bakki a large, site type 2 farmstead. From these registries, Bakki was clearly an active farmstead from the 12th century to the present day.

A field survey carried out at the site in 2005⁷⁹ revealed that modern construction projects have likely obliterated earlier phases of occupation, except in one area (E482530/N585710) where the ruins of two structural features and a possible enclosure wall were still visible on the surface. No subsurface archaeological research to examine these features had been conducted at the site prior to my 2008–2013 coring survey. The goal of my subsurface coring survey⁸⁰ was to date the visible ruins at Bakki and to examine the immediate area around the enclosure wall. Since the total research area at Bakki is small in comparison to other sites – covering a space of merely 2 m² (0.002 ha) – only target coring at one-meter spacing was used.

⁷⁹ B. Zoëga (2005).

⁸⁰ Coring was carried out in 2008 with the assistance of Bryndís Zoëga, who identified the location of the ruins and walked me through the history of the site and of her findings from her 2005 field survey.

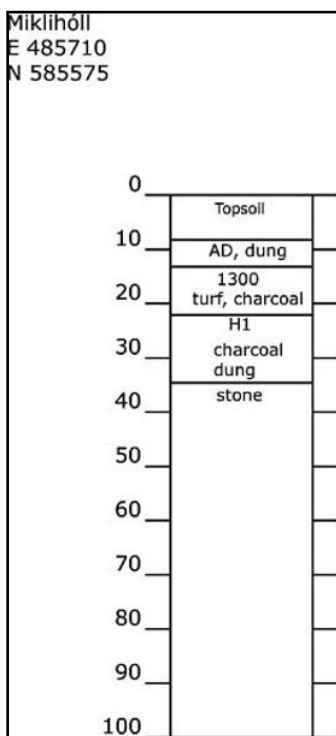


FIGURE 50
Profile of Miklihóll core 20

The ruins were located downslope from a small ridge, an area somewhat protected from the wind. The target coring survey revealed a surrounding environmental landscape composed of dense organic soils crosscutting areas of drier silts. The erosion rate at Bakki is higher than in other areas of the region, documented by slow topsoil accumulation, averaging less than 5 cm⁸¹ across the site. Overall, the landscape here would have been dry, but with available turf resources, throughout the medieval period.

Feature 1 (E482514/N585680) resembles an enclosure and runs the entire length of the 2 m² area. Dating the wall, however, remains elusive since there is little turf preserved and no cultural material associated with the wall. Likewise, the soils surrounding the wall are shallow and eroded, leaving no clues as to the duration of habitational use.

Feature 2 (E482532/N585705) is an oval-shaped depression. Profiles from the target coring survey discovered faint traces of charcoal and turf within the depression, resting atop a bed of stones and gravel, both of which appear

81 In comparison, the mean rate of topsoil deposition for Skagafjörður is 10 cm.

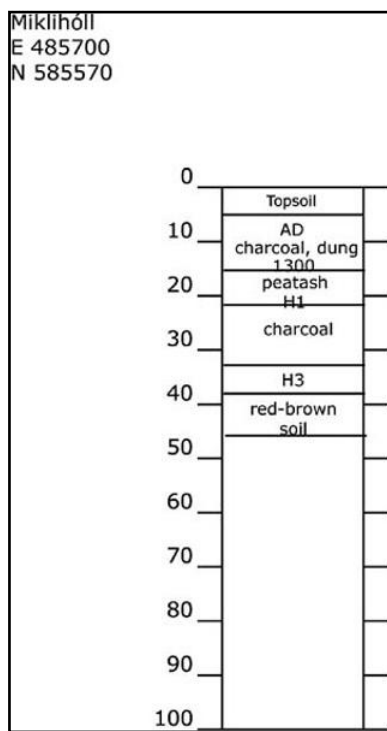


FIGURE 51
Profile of Miklihóll core 21

natural. No tephra horizons were found in association with this thin cultural layer, making relative dating of the feature impossible. The scant data here provide a tantalizing indication of human occupation. The precise nature and use of the feature – whether this depression could be the ruins of a former structure – is unclear; the turf, while present, lacks architectural integrity, making it possible that the depression could have resulted from midden debris.

Feature 3 (482525/N585700) is of rectangular shape and is located west of feature 2 and near the enclosure wall (feature 1). Profiles from the target coring survey in and around the possible structure document dense layers of cultural material, including turf and charcoal below an in-situ H1 (1104) tephra layer (see cores 5–6 in Table 24 and Figures 52 and 53). Interestingly, there are two distinct turf horizons, separated by a lens of charcoal and peat ash (see Figure 53). This suggests that the span of occupation was ephemeral, perhaps even seasonal. The structure itself is relatively small: roughly 8–10 m in length and 5 m in width.

Dates from the coring survey push back the occupational history of Bakki by more than 100 years, but the data cannot conclusively state that Bakki was a farmstead by the start of the 12th century. The pre-1104 structure is small in size

TABLE 24 *Coring data from Bakki*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
5	482525	585700	H1 (14)	charcoal, peatash, turf	before 1104	small structure with H1 directly on top, so it is likely the structure is fairly contemporary with H1
6	482524	585702	H1 (15)	charcoal, turf	before 1104	better preserved area of the small structure; likely not a household, but could be a workshop or a temporary dwelling

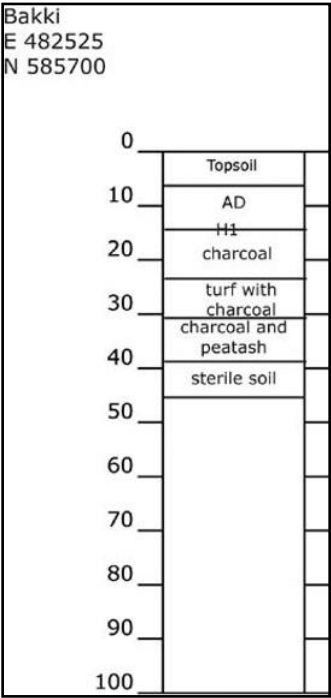


FIGURE 52
Profile of Bakki core 5

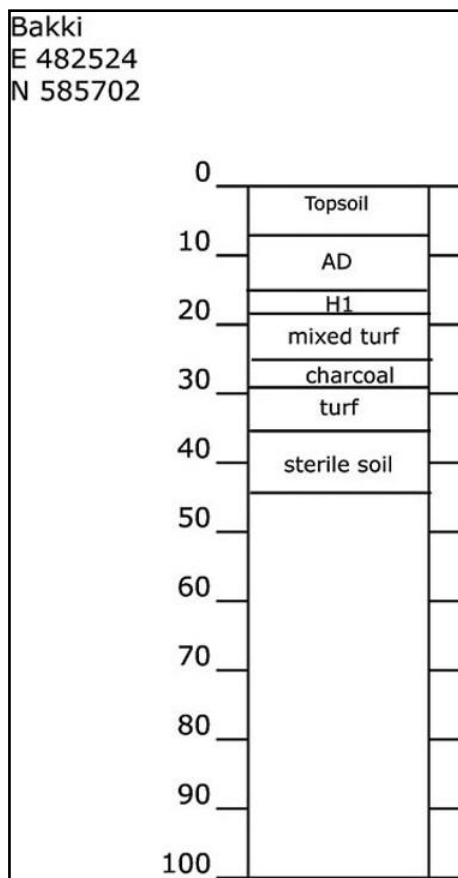


FIGURE 53

Profile of Bakki core 6

and there are no other associated features that one would expect to find with a permanent household. Bakki is, however, in close proximity to Kolkuós, suggesting that the pre-1104 habitation of the site might be connected to trading activities at the harbor, potentially as a workshop or shelter for a traveling merchant or farmer.

5.5.6 *Hofstaðir*

Hofstaðir is located at the southern boundary between Viðvíkursveit and the Blönduhlíð valley, and is situated on top of a low natural plateau directly above the estuary at the mouth of the Skagajörður fjord system, where the sea and the Héraðsvatn River meet. At 120 masl, the physical setting at Hofstaðir is consistent with a mixed midland ecology, and can be organized into two spheres: west and east. The western sphere (103 masl), located close to the Héraðsvatn

River, is a large grassy field, while the eastern sphere (120 masl) consists of gently rising, partially wooded hillocks that make their way up to the base of the Blönduhlíð foothills. Hofstaðir today is divided into several cultivated grass fields, domestic structures, and a few summer houses for travelers. The field and coring survey did not cover the entirety of the site, but instead was focused on the 3 ha area thought to contain the earliest occupation of the site.⁸²

Census records indicate that Hofstaðir was a farmstead site with a value fluctuating between 60 hundredths in the 14th century and 50 hundredths in the 19th century. These figures indicate that the Hofstaðir farmstead was always large, ranging from a size 1 to a size 2 category throughout its history. The earliest date for the establishment of the farmstead at Hofstaðir is, however, questionable. On the one hand, the name Hofstaðir appears in *Landnámabók* where it is mentioned that farmers attended hof or pagan ceremonies⁸³ at the site, but the text says nothing of those who settled there or whether the site was a farmstead or a ceremonial place during the early phases of colonization. The name, comprised of the words ‘hof’ (temple) and ‘staðir’ (denotes a place of importance), supports a folk-cultural interpretation of the site as an original settlement farm of some social standing.⁸⁴ Part of this understanding is connected to the fact that today Hofstaðir is an active farmstead with a public church on its grounds. The first mention of a Christian church at the site dates to the 14th⁸⁵ century, but again the cultural-historical understanding within the community today is that Hofstaðir was always a place of ideological significance: first as a pagan temple, subsequently as a church. The pagan hof is believed to have been located atop a low-rising hillock (115 masl) located within the western field at the site. No previous archaeological work to test these interpretations has been conducted at Hofstaðir.

The field and coring survey at Hofstaðir aimed to determine the age of the farmstead, to detect any possible ideological structures, and to examine the nature of any early economic activity at the site. As a midland site located at a central junction between the sea and the Héraðsvatn River, Hofstaðir is an insightful case study to examine the degree of possible interaction, if any, among sites within the valley. The field survey began at the upper, eastern

82 A number of the Hofstaðir grass fields were undergoing fertilization and plowing at the time of this survey, restricting access to the northern fields.

83 In section 203, *Landnámabók* describes how Kollsvein the Strong, owner of Kollsveinsstaðir, “used to hold his sacrifices at Hofstaðir” (1972, 92).

84 Pálsson (2004).

85 Bishop Jón's saga in *Bisupa saga* 2003.

portion of the site where a modern church now stands. The construction of a parking lot and the laying of subsurface electrical lines and telephone poles have extensively disturbed the area around the church. The area was deemed to be too badly disturbed to be included in the coring survey. Behind the church, the foothills, densely covered by dwarf birch trees, steadily increase in steepness. The soils are shallow with only a modest layer of topsoil followed by a lens of glacial gravel and small stones. If there was any early human occupation in this area, the evidence no longer exists. The field survey on the lower, western portion of the site noted the presence of deep drainage ditches that follow the entire perimeter of the field. Profiles from these drainage ditches suggest that the area is a former wetland with excellent preservation of the H₁ and H₃ tephras. The field survey also noted two small hillocks (E482840/N577867 and E482861/N577907) and one comparatively large mound (E482895/N577835) located within close proximity to one another within the western field. The mound measures about 60 m in length and about 25 m in width at its widest middle section. This mound is believed to be the spot where the Viking hof once stood. Today, the ruin of a modern rectangular animal structure sits on top of the mound. The mound and the field that surrounds it are used for grazing sheep and growing grass.

The coring survey concentrated on the lower, western field with an extensive 25 m spaced coring program across the entire field, an area covering about 21,275 m² (2.13 ha). Targeted coring was carried out across the mound feature with 2 m spacing intervals. Coring profiles confirmed that the characteristic wetland soils observed in the drainage ditches were true for the entire western field. The soils are dense, highly water-saturated, iron-rich clayey silts characteristic of bog soil. Prehistoric horizons (below the H₃ tephra layer) consist almost entirely of peat and only a thin layer of dark humic soils, as is characteristic of a bog environment. For the horizon between H₃ and H₁, the period when human occupation occurs in Skagafjörður, there is less peat and more soil, but the high bog-iron ore content suggests that the area was submerged in stagnant water until the H₁ (1104 A.D.) tephra layer was deposited. After 1104, the soils become somewhat silty, but by and large the field remained heavily waterlogged well into the modern era. The topsoil horizon across the field is thin (± 5 cm) indicating that waterlogging lessened only after the construction of extensive modern drainage ditches. The environment of the area in the pre-state period would have been consistent with a wetland area, capable of supporting grass growth but perhaps not an ideal location for a domestic residence.

Despite the dampness of the environment, cultural material, mostly charcoal and animal bone fragments, is present in the western field. Most of this

material dates to well after 1104 A.D., and in some places where the 1300 tephra is preserved we can further state that the material is post-1300 (see cores 21–32 in Table 25). The concentration of cultural material occurs within an area of about 250 m² (E483130-5/N577795-845) located in close proximity to the standing church. The spread of cultural material appears to be random, with no single concentrated area to suggest in-situ activity. One hypothesis might explain this patterning: charcoal and bone are items commonly found in a midden, and because midden material is often reused as fertilizer, these findings are therefore indicative of enrichment practices at the site. Undermining this hypothesis, however, is the fact that the spread of materials is sparse – it is more likely that the charcoal and small bits of bone are a secondary deposition transported by either wind or rainfall from the upper, eastern field onto the lower, western field.

Target coring was done at each of the three mound features at the site. Feature 1 (E482892/N577894) is the largest of the three features (see cores 11–20 in Table 25). Coring profiles illustrate that the mound itself is natural, not man-made. The mound consists of gray sands, gravel, and stones below an in-situ H₃ tephra layer. The geomorphology is consistent with a glacial moraine. Soil horizons above the H₃ stratum are, uncharacteristically for Hofstaðir, dry red-brown silts. The mound would have been one of the few dry areas of the site during the pre-state period. Culturally, the remains of a modern animal structure can still be seen on the surface. Occasional iron nails are likewise found on the surface, but no other cultural materials are present for the modern era. The subsurface coring survey, however, discovered the presence of both turf and charcoal between the 1300 and H₁ tephra horizons (see core 16 in Table 25) and below an in-situ H₁ layer (see core 17 in Figure 54 and cores 17–19 in Table 25). Cores were placed every 2 m around a 10 m radius. Cultural material below the H₁ horizon consists mostly of well-preserved red turf with lenses of H₃ in it. From these data it is difficult to determine the exact nature of the activity. The turf is suggestive of a structural feature, but which type of feature – i.e., whether a domestic residence or animal structure – is unclear. Further excavation is necessary to determine the size, shape, and use of this feature. What can be said with certainty is that it dates to at the very least the Early Medieval period (1000–1104).

Feature 2 (E482861/N577907) is located within 20 m northeast of feature 1 and is much smaller in size (roughly 25 m in length and width) and lower in relief (110 masl). Coring profiles document that as with feature 1, feature 2 is part of a glacial moraine. Aside from deposits of animal dung immediately below the topsoil horizon, no other cultural material was found. The dung deposits are likely connected to the modern-era animal structure ruin in

TABLE 25 *Coring data from Hofstaðir*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
1	482880	577890	NA	dung, animal bone	modern	activity area
2	482875	577890	H3 (33)	dung	modern	activity area
3	482870	577900	H3 (27)	dung	modern	activity area
4	482870	577905	H3 (32)	dung	modern	activity area
5	482870	577910	H3 (30)	dung, animal bone	modern	activity area
6	482880	577900	H3 (37)	dung	modern	activity area
7	482885	577900	H3 (40)	dung	modern	activity area
8	482870	577870	H1 (22); H3 (38)	dung	modern	activity area
9	482840	577870	H3 (40)	dung	modern	activity area
11	482887	577887	NA	dung, part of a stekkur	modern	livestock structure, still partially visible on the surface
12	482890	577895	NA	dung, part of a stekkur	modern	livestock structure, still partially visible on the surface
13	482885	577883	NA	dung, part of a stekkur	modern	livestock structure, still partially visible on the surface
14	482887	577865	NA	turf (top of mound), iron nail, greasy soil (floor)	modern	livestock structure, still partially visible on the surface
15	482895	577860	H1 (14)	turf w/H1, ash	after 1104	second structure not visible on the surface

TABLE 25 *Coring data from Hofstaðir (cont.)*

Core	ISNET E	ISNET N	Tephra (cm below ground surface)	Cultural inclusion	Date of cultural material	Interpretations
16	482890	577865	1300 in turf; H ₁ (35); H ₃ (40)	turf, charcoal, iron	between 1300 and 1104	second structure not visible on the surface
17	482900	577855	H ₁ (13); H ₃ (40)	charcoal, turf	before 1104	oldest material on the site; structure
18	482898	577585	H ₁ (13); H ₃ in turf	charcoal, turf w/H ₃	before 1104	oldest material on the site; structure
19	482898	577848	H ₃ in turf	charcoal, turf w/H ₃	before 1104	oldest material on the site; structure
20	482885	577843	H ₃ (28)	dung	modern	activity area
21	483135	577870	1300 (29); H ₃ (40)	charcoal	before 1300?	midden from church area
22	483135	577845	NA	stonecoal, charcoal, peatash, burnt bone	stonecoal-modern; charcoal is likely older	midden from church area
23	483135	577820	H ₃ (60)	burnt bone, charcoal, turf	turf is likely pre-modern	midden from church area
24	483130	577795	H ₃ (42)	bone, charcoal, stonecoal	charcoal is likely pre-modern	midden from church area
25	483110	577790	H ₃ (30)	dung	modern	midden from church area

26	483110	577815	H3 (38)	charcoal	charcoal is likely pre-modern	midden from church area
27	483110	577840	H3 (34)	charcoal	modern and pre-modern	midden from church area
29	483110	577890	H3 (35)	charcoal	modern	midden from church area
30	483085	577900	H1 (32); H3 (40)	charcoal	modern	midden from church area
31	483085	577875	H3 (30)	charcoal	modern	midden from church area
32	483085	577835	H3 (40)	bone, charcoal	modern and pre-modern	midden from church area
33	483085	577810	H3 (45)	charcoal, turf	pre-modern	activity area
34	483085	577785	H3 (31)	charcoal	modern	activity area
40	483065	577900	H1 in turf; H3 (40)	charcoal; turf?	modern	activity area
41	482940	577935	H1 (9); H3 (40)	charcoal	modern	activity area

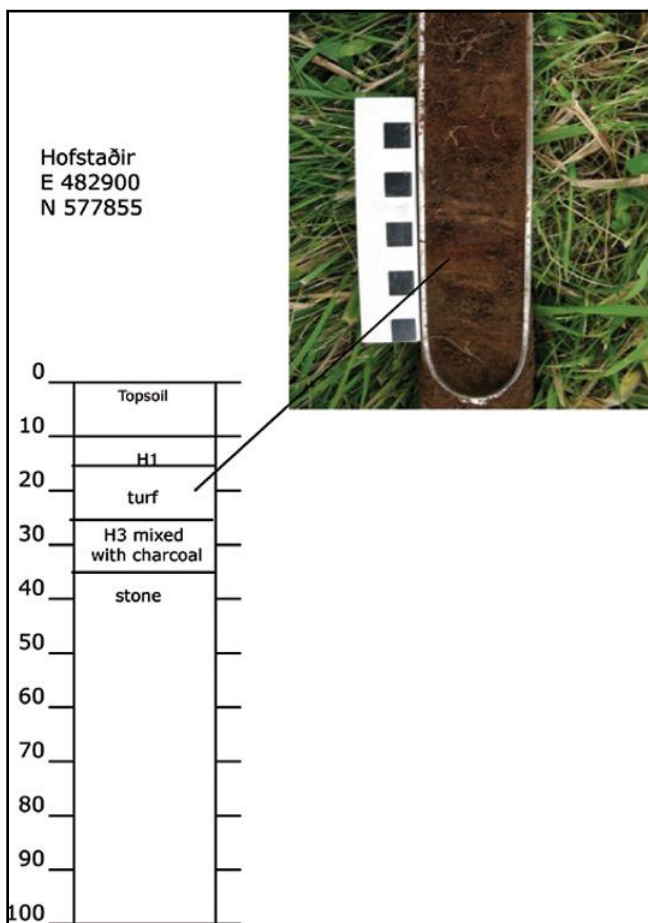


FIGURE 54 *Profile of Hofstaðir core 17*

feature 1. Feature 3 (482895/N577835) is located within 30 m southeast of feature 1, and like feature 2 is significantly smaller in size (roughly 30 m in length, 15 m in diameter) and lower in relief (109 masl). The subsurface coring survey showed that as with features 1 and 2, feature 3 is a glacial moraine. Like feature 2, feature 3 contained a thin lens of dung below the topsoil horizon, but no other cultural material could be found.

It is clear from these tantalizing data that further archaeological work is necessary to determine the exact nature of pre-state period activity at the Hofstaðir site. Data from the subsurface coring survey can neither confirm nor reject the popular traditional belief that Hofstaðir was a place of ideological significance during the Settlement period, but we can say without hesitation

that this midland site was in use from an early date, as demonstrated by the presence of turf and charcoal below an in-situ H1 layer in feature 1. If there was a Settlement period farmstead at Hofstaðir that predates the feature 1 findings, it is likely to be found in the unsurveyed areas of the site, potentially changing our understanding of the history of landscape evolution here.

5.5.7 *The Organization of the Viðvík Territory*

The data from the coring survey indicate that during the initial phases of settlement, the Viðvík Territory was organized around a diverse agrarian-based economy alongside possible specialized craft-production sites (see Figure 31). This organization is reflected in the settlement patterns of the valley, with the establishment of at least one large midland farmstead at the site Viðvík (site type 1) and two large, but comparatively smaller, midland farmstead at sites at Hofstaðir (site type 1–2) and Svaðastaðir⁸⁶ (site type 2). In addition to these farmsteads, the Viðvík territory was also the location of one of the few trading harbors in the north of Iceland – the site of Kolkuós. The families connected to the farmstead site at Viðvík likely managed activities at Kolkuós. New data presented here have shown that in addition to these three previously known farmsteads and one trading center, a number of specialized activity areas were also created: the coastal site at Bakki, the midland sites at Miklihóll and Hólakot, and at the lowland sites at Fornistekkur and Langhús. Similarly to the Hof territory, the activity area sites at Miklihóll and Fornistekkur reflect agrarian interests, aimed at possible livestock surplus production; but unlike the Hof territory, the Viðvík territory also had two sites devoted to possible specialized craft production with intensive ironworking seen at Langhús and possible flax-weaving at Hólakot. Lastly, the small activity area at Bakki may reflect interests connected to the Kolkuós trading harbor.

The organization of the Viðvík territory prior to the 12th century reflects both of these economic aims as seen by the evidence from the agrarian site at Miklihóll and the mixed agrarian and craft-production site at Hólakot (see Figure 32). At both of the midland sites, there is no evidence of full-time domestic occupation; rather, both of these sites demonstrate specialized and intensified economic practices. During this period, the trading harbor at Kolkuós was in full operation, coordinating local as well as global market

86 Svaðastaðir, as mentioned at the start of this chapter, was not included in the survey study, but is described as a farmstead in early medieval texts. The site is located 4 km south of Hofstaðir, at the boundary between the Viðvíkursveit and Blönduhlíð areas. Further archaeological work is necessary to confirm these descriptions, but is treated here based on our present understanding of the site.

exchanges. The presence of a marketplace is suggestive of the possibility that the economies documented at both Miklihóll and Hólakot might be connected to the commodity exchanges negotiated at Kolkuós. This hypothesis is all the more tantalizing when we consider the small structure discovered at the coastal site of Bakki associated with small amounts of domestic material separated by strata of vegetation growth that are suggestive of seasonal use and reuse over a hundred-year period. The proximity of Bakki to Kolkuós make it possible that the site was established as a temporary shelter for a traveler involved in the summer trading activities at Kolkuós.

By start of the Sturlunga period in 1104 A.D., the economy of the Viðvík territory was intensified, as demonstrated by Miklihóll becoming a full-time farmstead, the creation of a full-time farmstead at the site of Brimnes,⁸⁷ which may be connected to earlier activity at Bakki, and two new activity areas established at the sites of Fornistekkur and Langhús (see Figure 33). The activities at Fornistekkur are dedicated to livestock housing, while the activities at Langhús are dominated by intensive iron production, with no evidence of a domestic occupation at either of these sites until well after 1300 A.D. The environmental conditions⁸⁸ at both Langhús and Fornistekkur are less than ideal for a full-time farmstead, but these areas were utilized for the resources they did have: bog-iron ore at Langhús and a high-relief mound and ample sedge vegetation at Fornistekkur. The occupational use of these sites highlights the organization of the Viðvík landscape around specialized economic areas with a growing interest in agrarian surplus by the beginning of the Sturlunga period. As with the evidence from the Hof territory, the data from the coring survey at sites in the Viðvík territory point to a heightened commercialized livestock economy that was contemporaneous with the first appearance of incipient state-level institutions in the 12th century and heightened activity at the trading harbor at Kolkuós.

After 1300, when Iceland was organized around state institutions, the organization of the Viðvík territory underwent the same processes of restructuring that we saw in the Hof territory (see Figure 34). According to historical census records, no fewer than 22 new farmsteads, including Hólakot, Langhús, and Fornistekkur were established (see Table 26). These farmsteads are located in both the lowlands and midlands, with 21 of these sites falling into category of a small farmstead (site types 3 and 4). As with the farmsteads documented in Hjaltadalur, the majority of these farmsteads were owned by the Hólar

87 Brimnes is a lowland site just 3 km south of the ruins discovered at Bakki.

88 The landscape of these sites, as discussed earlier in this chapter, is prone to both waterlogging and erosion.

TABLE 26 Farmstead sites in Viðvíkursvæit over time

Farmstead	Tax value*	Size	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Álgerðastaðir (L**)	<1	4				X	X	
Ásgeirsbrekka (M)	50	2				X	X	X
Bakki (C)	50	2			X	X	X	X
Brimnes (L)	50	2			X	X	X	X
Enni (M)	20	3				X	X	X
Fornistekkur (L)	<1	4				X	X	X
Frossabrekka (M)	<1	4				X	X	
Geitagerðir (M)	<1	4				X	X	
Gljúfrá (L)	<1	4				X		
Grænagerðir (M)	<1	4				X	X	
Hofdalir (L)	1	1				X	X	X
Hofstaðir (M)	60/50	1/2	X	X	X	X	X	X
Hólakot (M)	<1	4			X	X	X	X
Hringver (M)	30	3				X	X	
Kvínishóll (L)	<1	4				X		
Kýrholt (L)	50	2				X	X	X
Lækur (L)	20	3				X	X	X

TABLE 26 *Farmstead sites in Viðvíkursveit over time (cont.)*

Farmstead	Tax value*	Size	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Langhús (L)	20	3				X	X	X
Litlihöll (L)	10	4				X	X	X
Lón (L)	30	3				X	X	X
Miklihöll (M)	40	2			X	X	X	X
Narfastaðir (L)	30	3				X	X	X
Pálsgarði (M)	<1	4				X	X	
Ranveigarstaðir (M)	<1	4				X		
Svaðastaðir (M)	40	2	X	X	X	X	X	X
Vallhöll (M)	<1	4				X	X	
Vatnsleysa (L)	30	3				X	X	X
Viðvík (M)	100/80	1	X	X	X	X	X	X

* Tax Value is estimated in Danish Long Hundredths
** L = Lowland; M = Midland

bishopric, including even Viðvík by the 15th⁸⁹ century. Unlike the Hof territory, however, activity areas are almost entirely replaced by small farmsteads rather than by a combination of *gerði* and farmstead sites (see Table 27). These data suggest that the economic organization of the Viðvík territory always included agrarian pursuits but that the agrarian activities of the 12th century were clearly different than those of the 15th century (for a discussion of these economic shifts, see Chapter 6).

5.7 General Settlement Trends for Hjaltadalur and Viðvíkursveit

The above discussion of individual sites has shown a fair degree of variation among sites, but if we compare the landscape organization of all the sites within all three territories, numerous commonalities likewise surface. Most importantly, the data presented here document the reorganization of the entire landscape over time, suggesting that the social structure behind this organization was fluid and malleable to change.

Data from the coring survey conducted in the Hjaltadalur-Viðvíkursveit valley system have provided four new critical insights on the evolution of the Icelandic economy and landscape development. First, all environmental zones – coastal, lowland, midland, and highland – have been occupied from the time of settlement to the present (see Table 28). Second, the survey revealed a variety of site types and sizes, suggestive of a relatively diversified, rather than a homogenous, economic landscape during the pre-state period (see Figures 31–33 and Table 29). The most surprising feature of this early landscape organization is the near absence of small farmsteads and the dominant presence of large (types 1 and 2) farmsteads alongside small but specialized activity areas⁹⁰ that have shown very little evidence of any domestic material (see Figures 31–33). Activities at these sites range from agrarian surplus to craft production, with differing organizational strategies documented for the Hof and Viðvík territories. These types of activities suggest that a scale-free network organized the economic system of pre-state Hjaltadalur and Viðvíkursveit, with a hierarchy of sites and corresponding hierarchy of relationships between sites. I will discuss in Chapter 7 the possible implications this organization had for the process of secondary state formation, but for now it is important to

89 Viðvík is listed as a one of the Hólar properties in the Hólastóll 1449 registry.

90 Evidence from later time periods has shown how communal activities such as sheep roundups (*réttir*) acted as points for interaction within a landscape (Aldred 2006). It is possible that the same was true for these early activity areas (see Chapters 6 and 7).

TABLE 27 Activity area sites in *Víðkursveit* over time

Activity area	Type of activity	Settlement (874–1000)	Early medieval (1000–1104)	Sturlunga (1104–1300)	Late medieval (1300–1600)	Early historic (1600–1800)	Historic (1800–1900)
Bakki (C)	Activity/Shelter Area		x				
Brimnes (L)	Pagan Graves	X	X				
Enni (M)	Pagan Graves	X	X				
Formistekkur (L)	Animal Husbandry			X	X		
Hofstaðasel (M)	Animal Husbandry				X	X	X
Hólakot (M)	Charcoal Making; Flax Weaving (?); Animal Husbandry	X	X	X			
Kolkuós (C*)	Harbor and Trading Center	X	X	X	X	X	X
Langhús (L)	Iron-Working			X	X		
Miklithóll (M)	Animal Husbandry		X				

* C = Coast; L = Lowland; M = Midland

TABLE 28 *Sites in Hjaltadalur and Viðvíkursveit by elevation over time (n = 79)*

Region	Time period					
	Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Coast	1	2	2	2	2	2
Lowland	1	1	3	15	11	10
Midland	8	14	10	38	43	28
Highland	1	2	2	4	5	3
TOTAL	12	20	17	59	61	43

TABLE 29 *Sites by region and time period (non-domestic sites in parenthesis) identified in the archaeological coring survey*

Region	Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Hjaltadalur	3 (2)	6 (4)	5 (2)	18 (13)	24 (12)	17 (5)
Viðvíkursveit	3 (4)	3 (7)	6 (5)	27 (5)	25 (3)	19 (1)
TOTAL	6 (6)	9 (11)	11 (7)	45 (18)	49 (15)	36 (6)

keep in mind that the socially defined landscape of the valley would have facilitated both household sustainability and surplus production. A third observation made from the coring survey is that economic activity intensified at all sites during the Sturlunga period, as seen by the initial move towards a proper-tied landscape typified by small farmsteads (see Figure 33). Lastly, data from the coring survey documented that the post-1300 state-level economy is engendered by the development of a new landscape organization, characterized by a higher ratio of small to large farmsteads and activity areas present only near the Hólar bishopry (see Figure 34).

These data provide not only a basis for examining the possible relationships between sites, but also a well-documented study of landscape evolution in Hjaltadalur and Viðvíkursveit that will help us to better recognize authentic material indicators for systems of production, consumption, and distribution for other regions in Iceland as well. Settlement pattern data from Hjaltadalur and Viðvíkursveit prompt the crucial question: Why reorganize the landscape?

In the next chapter, I will examine settlement patterns from multiple regions of Skagafjörður using data from the **Multiregional Site Registry (MSR)**. I will analyze settlement trends from a social network perspective, examining how changes in the economy may explain why the landscape is reorganized and how these structural shifts may have helped to shape the development of secondary state institutions in northern Iceland.

From Independent Traders to Dependent Tenants: Reflections of an Economic Landscape in Skagafjörður

The distribution of farmstead and activity area sites in the Hjaltadalur-Viðvíkursveit valley system confirms that the economy of medieval Iceland in the north centered on pastoral-agrarian pursuits, but these data also warn against the view of a farmstead system geared only towards smallholders and sustainability and hint that this rural economy could have held additional commercial pursuits. The colonization process described in medieval texts, however, makes no mention of the establishment of cities or villages, and instead emphasizes the ability of chieftains to provide agricultural lands for their retinue.¹ This settlement strategy would seem to support the primacy of agricultural production for an economy of sustainable subsistence rather than for one engaged in the types of commercialism and overseas trade that were so widespread throughout Norse society during the Viking Age. Are these differences between the settlement trends documented in the archaeological and the written record contradictory or are they are implicitly describing two sides of the same economic system? This presumed tension between text and archaeology speaks to a thornier concern over our ability to gauge the actual extent and importance of both local and long-distance trade in medieval Iceland, a concern that is underscored by methodological challenges and analytical assumptions about what a commercial economy should look like.

One important outcome of my own research and development of the Skagafjörður Landscape Project (SLP) is an innovative methodological approach towards incorporating existing datasets with new regional settlement pattern analysis. My research approach, grounded in landscape and social network theory, focuses on site distribution as a reflection of the potential range of activities supported by a society's political economy, enabling researchers to examine the degree of influence specific economic enterprises exerted on the creation, maintenance, or collapse of a cultural system. With its focus on the structure of a network rather than on a list of traits, social network theory avoids the pitfalls of narrow categorization and permits researchers to consider social action with fewer preconceptions.

¹ Hines (1997, 264).

This chapter seeks to provide an interdisciplinary perspective on the nature of the medieval Icelandic economy, testing the hypothesis that despite the absence of urbanism, the endeavors of trade, exchange, and surplus production played a larger role in the economy than has previously been assumed. The results from the archaeological survey of Hjaltadalur and Viðvíkursveit suggest a diversified economy, with a well-developed household provisioning system alongside a potential surplus industry capable of managing both agrarian and non-agrarian goods. To further test and better understand these results, I have designed the **Multiregional Site Registry (MSR)** for Skagafjörður, a comprehensive database covering an area of roughly 5,500 km² that includes 610 sites spanning the 9th through 20th centuries (see Figure 55 and Table 30 as well as chapter 4 for a discussion on how the ecological categories were defined in this study). The MSR database allows highly integrated forms of analysis as it facilitates research concurrently along multiple lines of evidence, from environmental conditions to textual descriptions.

6.1 Models for Understanding the Medieval Economy in Iceland

Data from the archaeological coring survey discussed in chapter 5 demonstrate that site distribution in the Hjaltadalur-Viðvíkursveit valley system conforms to a scale-free rather than a clustered network. Scale-free networks are characterized by a site distribution that is hierarchical but also scalar, permitting several possible avenues of interaction among sites (see also Chapter 4). Contrary to the commonly held opinion that the highlands were the preferred location for the first wave of settlement,² domestic sites of varying size were established in *all* ecological zones located along a continuum of geographic elevations that range from sea level to nearly 300 masl. As each ecological zone provides only some of the crucial resources necessary for the survival of any farmstead, the settlement pattern suggest a landscape organization capable of facilitating a network of cooperation, or at the very least an effort of suppressed hostility, that would ensure the exchange of goods between households. While some degree of local trade and exchange was necessary and may have even included occasional negotiations for acquiring luxury goods from abroad, the data from one valley alone cannot adequately support the assertion that production for non-local markets was ever a vital component in the totality of Icelandic enterprise. Research of this kind requires both micro (site-specific) and macro (regional) levels of analysis, which are best accommodated by the integration

² Byock (2000).

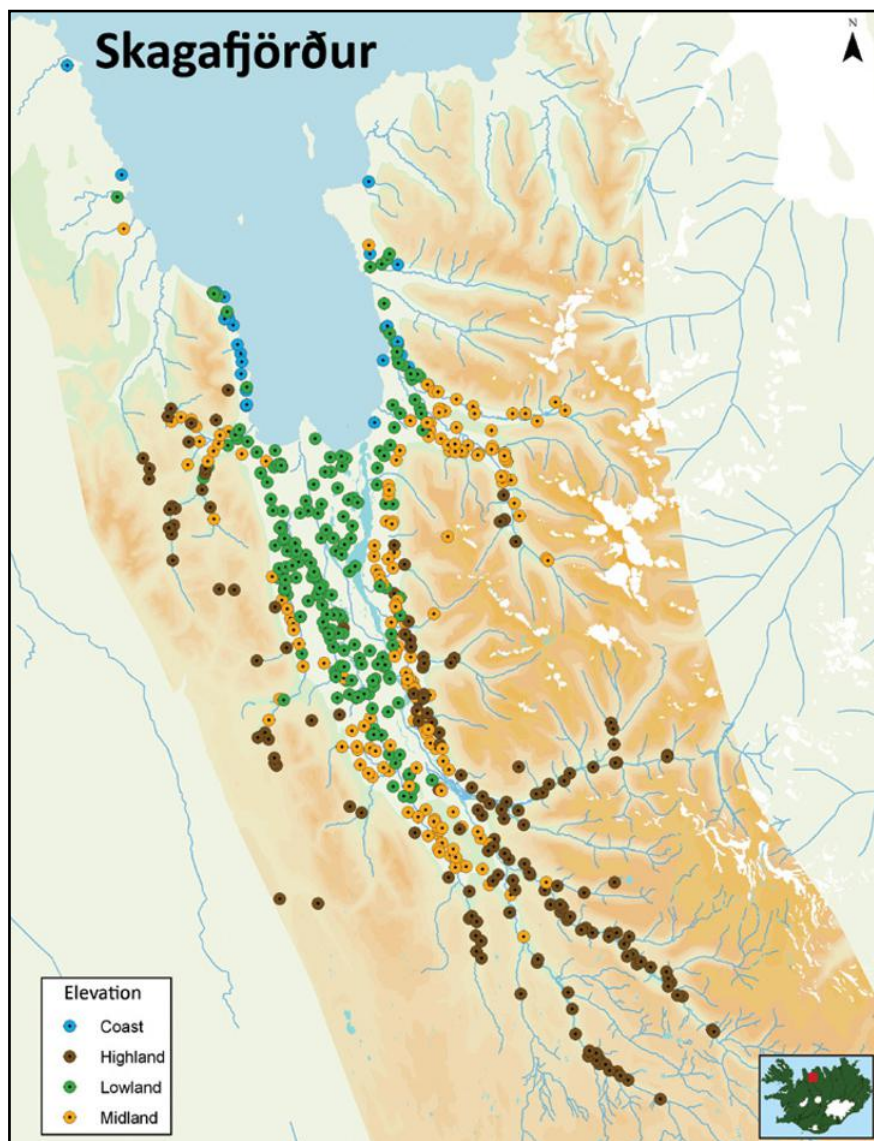


FIGURE 55 *Map of Skagafjörður by elevation*

of all available datasets into a single working database, such as the Multiregional Site Registry (MSR) that I have compiled for Skagafjörður.

Settlement data from the MSR will be used to examine two related questions: whether Skagafjörður as a whole was organized under a scale-free or a clustered network; and whether the social-landscape structure of Skagafjörður

TABLE 29 *The number of sites by elevation within the geographic areas of Skagafjörður*

Area	No. of Highland sites	No. of Lowland sites	No. of Midland sites	No. of Coastal sites	Category
Austurdalur	36	0	0	0	Highland
Blönduhlíð	29	7	50	0	Midland
Borgarsveit	4	19	2	0	Lowland
Dalsplássi	0	0	4	0	Midland
Efri-byggð	4	1	7	0	Type D
Fremri-byggð	3	2	5	0	Type A
Gönguskörð	9	2	14	0	Type D
Hegranes	0	27	0	0	Lowland
Hjaltadalur	6	0	37	0	Midland
Höfðaströnd	0	3	0	3	Type B
Kjálka	11	0	0	0	Highland
Kolbeinsdalur	0	0	13	0	Midland
Kvarningsdal	3	0	0	0	Highland
Langholt	3	48	2	0	Lowland
Neðri-byggð	0	8	7	0	Type C
Norðurárdal	19	0	0	0	Highland
Óslandshlíð	0	14	0	4	Type B
Reykjaströnd	0	5	0	15	Coastal
Sæmundarhlíð	4	9	9	0	Type A
Skaga	0	1	1	2	Type B
Skörð	3	0	3	0	Type D
Staðarfjöll	7	0	0	0	Highland
Svatárdalur	10	0	0	0	Highland
Tungusveit	4	10	23	0	Midland
Vallhólmi	0	15	0	0	Lowland
Vesturdalur	21	0	2	0	Highland
Viðmýrarplássi	0	16	19	2	Type C
Viðvíkursveit	0	18	16	2	Type C
Vikutorfa	0	11	1	0	Lowland

* See Chapter 4 for a description of the ecological categories.

capable of facilitating both local and international trade. I will address these questions through three possible economic models: the Autarkic Model, the Imperial Economy Model, and the Norse Economic Territory (NET) model. Each model, shaped by differing perceptions on the circumstances under which Iceland was colonized, represents a distinct economic perspective on the nature of early Icelandic society and the subsequent development of secondary state institutions. These economic features are discernable in site distribution trends that can be identified through an explicit suite of archaeological correlates.

6.1.1 *Autarkic Model: Autonomous Secondary State*

As we saw in chapter 2, the Autonomous Secondary State Model is based on the premise that Iceland was settled by displaced Norwegian elites who envisioned Iceland as an opportunity to revitalize the glories of their fading world of chieftains back home in Europe. The goal of these agricultural settlers was to replicate the social structure of Norway as it existed before the introduction of kings and to remain predominately outside the political sphere of medieval Europe. The Autarkic Model proposes that under these conditions the economy of medieval Iceland was centered on local subsistence production carried out by all households, representing a clustered network organization. Trade is viewed in this model as a necessary activity – crucial goods, such as grain and timber, could only be acquired through importation, and equally vital local goods such as iron ore and fish were conscripted resources. On the other hand, this model cautions that trade was limited by strong social and environmental proscriptions; only elites were engaged in a gift economy that obtained overseas goods that subsequently could be redistributed. The elite gift economy would have used local goods for acquiring foreign luxury goods and additionally to orchestrate a local-based exchange network between elites and followers. The economic goal for most households, however, was a sustainable provisioning system, not commercialism.

These economic goals are echoed in the proposed settlement distribution trends put forward by the Autarkic Model: if self-sufficiency was the driving force behind the economy, then we can anticipate an early emphasis on the highland regions. The environment of the highlands, with their drier soils and groves of forests, were easily converted into grass pastures for livestock farming, making these areas ideal locations for the initial colonization efforts in Iceland. Midland areas, with their water-saturated, dense soils would have been less desirable, especially at the beginning of settlement when highland areas were still available. It is only after the highland areas became overpopulated and the detriments of erosion caused by overgrazing begin to surface

would midland property rise in value. Accordingly, the Autarkic Model posits that coastal and lowland sites would be the least attractive to the initial settlers as these areas are not ideal farming locations;³ however, control would have been exercised over some of the resources found in these regions, such as iron ore. We would expect then to find few permanent domestic occupations in these areas until the midland areas became overcrowded with farmsteads. Lastly, there is little reason to assume a hierarchy in site size under these conditions, as the initial colonization would have required a strong ethic of cooperation to transform this distant frontier into a proper Norse world.

Applying typical population growth trajectories as the basis of our calculations, the Autarkic Model predicts significant shifts in settlement trends to occur by the 13th century. As the dual engines of population growth and environmental degradation set into motion patterns of resource scarcity, this model anticipates a shift in site distribution as well as the development of site size hierarchies, with the establishment of a landscape system defined by a large number of small farms attached to a few large 'estate' farms. This landscape organization parallels the development of greater social inequality and a heightened attempt by elites to regulate and control land and resources.

Archaeological correlates for Autarkic Model over time are as follows:

Settlement period: site distribution clustered in the highland areas, with little differentiation in site size, with an economy geared towards self-sufficiency

Early Medieval period: decline in highland sites (due to environmental degradation) and beginning of settling midland areas and of site size differentiation

Sturlunga period: continued decline in highland sites, steady increase in midland sites, and beginning of lowland cultivation alongside an increase in the number of smaller domestic sites

3 Vésteinnsson (2001), conversely, argues that lowland areas would have been desirable lands during the initial settlement because they did not need to be cleared of scrub brush; however, this argument is weakened by the fact that on the whole, the lowlands were likely not any more 'ready-made' for settlement than the highlands – the lowlands still would have required a substantial amount of labor to transform these water-saturated areas into suitable pastures and homesteads.

6.1.2 *Imperial Economy Model: Hegemonic Colonial Secondary State*

The Hegemonic Colonial Secondary State Model, as described in chapter 3, is shaped by the hypothesis that the settlement of Iceland was part of the expansionary aims of the Norwegian monarchy. Grounded in historical discussions of the political and economic programs of the Viking Age world system, the Imperial Economy Model suggests that Iceland comprised but one component of a wider political network of planned colonies throughout the North Atlantic that were formally controlled by Scandinavian monarchies. Under monarchical administration, permanent colonists were deployed to these island peripheries in search of raw materials that could be sent back to Europe and converted into commodities for an international market. The economy included subsistence activities aimed at sustaining long-term colonists but ultimately was driven by the mercantile aims of non-local elites back in Scandinavia.

These economic goals allow the Imperial Economy Model to make several predictions about the distribution of sites over time. If the economy of Iceland was driven by the aims of imperialism, then the distribution of sites should echo a planned settlement pattern, rather than the more sporadic (but likewise representing a clustered network organization) colonization typical of an open frontier setting. The Imperial Economy Model, building on the well-documented social organization of the 14th century, suggests that elite leaders, who remained loyal to their kings back in the homeland, were necessary for coordinating the channels of communication among sites in order to facilitate a system of procurement, transportation, and exchange of commodities. The majority of sites, however, are predicted to be fairly homogenous, with each site working towards household sustainability, but with an emphasis on producing materials for a market economy coordinated by the Norwegian core. Under these configurations, there would be little competition among sites since all sites shared the goal of carrying out the orders of the monarch. Using the landscape organization of the 14th century as a model, we can predict that these enterprises were achieved with the establishment of small-tenant farmsteads that remained dependent on larger elite households for protection and for meeting some of their basic subsistence needs.

The basic settlement trends, according to the Imperial Economy Model, would exhibit few changes over time, with the exception of the preference for establishing sites in specific environmental regions, while also experiencing some degree of change as the monarchy began to strive for greater consolidation throughout its empire. As the economic and political ambitions of Scandinavia changed over time, we can anticipate seeing these goals reflected in shifts in site distribution. During the Settlement period, the economy of

medieval Scandinavia was formed around trade in limited but highly priced luxury items and hard-to-procure raw materials. Within these economic parameters, it would be logical to predict that sites were established in all environmental zones in Iceland; different resources could be found in different ecological niches. By the 12th century, however, markets in Europe were focused on the retail of staple goods, set at low prices but sold in bulk. Iceland could offer dried fish, wool, and smoked meat as potential staple goods. Under these conditions, it is likely that agrarian lands, especially the highlands and the areas near rivers and the sea would have been preferable settlement options.

Archaeological correlates for the Imperial Economy Model over time are as follows:

Settlement period: planned distribution of small farmsteads attached to larger farms in all environmental areas, with households organized around a supply-export economy, through surplus production and/or raw material procurement

Early Medieval period: continuation of small households in all environmental areas geared at surplus production

Sturlunga period: continued preference for small farmsteads positioned in areas where intensified production of staple goods, such as wool and fishing, could be carried out (highlands and the coasts)

6.1.3 *Norse Economic Territory Model: Synergistic Secondary State*

I will present here a third, new model, that I have named the Synergistic Secondary State,⁴ along with the corresponding Norse Economic Territory (NET) Model, which suggests that the settlement of Iceland was motivated by entrepreneurial merchant-farmers looking for new opportunities during the commercial era of the Viking Age. Contrary to the view presented in the Imperial Economy Model, I hypothesize that the initial settlers were only loosely governed by the royal administration of Norway, and instead remained more or less politically independent but economically connected to Scandinavia until the late 13th century, when Icelandic society formally came under the rule of the Norwegian State. In contrast to the

4 For a full discussion on the Synergistic Secondary State Model, see Chapter 7.

Autarkic Model, I hypothesize that Iceland was not an insular community on the edge of a Norse world, but was in fact well connected to the rest of Europe through its market participation in the Norse Economic Territory (NET).

These economic goals, according to the NET model, would include an effective and sustainable household provisioning system alongside the surplus production of mostly agrarian-based goods that could be exchanged either locally or internationally. This economic system, I will suggest, operated without urbanism and, for over 200 years, without the backing of state-level administration and represents a scale-free network organization. If this hypothesis is correct, we should expect to see these economic aims reflected in the distribution of sites over time. If the economic aims exceeded sustainability and included some degree of commercialism, we should expect to see all ecological regions – highland, midland, lowland, and coastal areas – utilized immediately from the beginning of settlement. Additionally, if Icelandic society remained politically independent, we should expect a settlement pattern engendered by a frontier ethos, with less coordination and more opportunistic settlement planning. These economic parameters likewise suggest the possibility for political and economic competition. If this hypothesis is true, then we can anticipate a hierarchical settlement trend even during the initial phase of open colonization.

If the hypotheses predicted by the NET Model are correction, we should anticipate these settlement trends to span the duration of the Viking Age, with a transformation in landscape organization once the medieval economy, with its focus on bulk staple goods, supplants the luxury-based Viking Age economy in the mid-11th century. I hypothesize that, within the parameters of a medieval economy, the settlement patterns in Iceland will reflect a surplus agrarian production for goods for export, such as sheep farming for wool. Projected settlement patterns for this hypothesis would necessitate greater control over land use, perhaps best facilitated by the development of smaller-tenant farms, utilizing all potential agricultural opportunities in the highlands, midlands, and lowlands. If these hypotheses are supported by the data from the MSR analysis, then I would suggest that the NET model should be used for examining the development of secondary state institutions in Iceland.

Archaeological correlates for the NET Model over time are as follows: With these models in mind, we can now turn to the settlement data compiled in the Multiregional Settlement Registry (MSR) for Skagafjörður and the results of the Skagafjörður Landscape Project SLP.

Settlement period: sites in all environments with little evidence of a planned settlement, and with a hierarchy of farmstead sizes alongside specialized activity areas aimed at acquiring luxury goods as well as agricultural provisioning systems to support households

Early Medieval period: a continuation of the patterns developed during the Settlement period, but with some projected changes as the overall economy changes, e.g. shifting to environments that could sustain intensification of goods for a staple-surplus economy

Sturlunga period: a steady increase in sites in all regions and a growing number of smaller households, reflecting a shift towards a staple-goods economy and the development of incipient state institutions and a feudal landscape

6.2 Results of the Skagafjörður Landscape Project

A total of 610 sites, with nine site type categories and four elevation groups spanning a thousand-year period (see Tables 30 and 31), were compiled for the MSR⁵ and considered for the Skagafjörður Landscape Project (SLP). Knowledge of these sites resulted from an interdisciplinary synthesis of my primary fieldwork, preexisting archaeological reports (published and unpublished), and a wide range of documentary sources that includes both economic records (census reports) and metahistorical literary records (sagas).

Of these 610, a total of 61 domestic and non-residential sites were established in Skagafjörður during the Settlement period (870–1000 A.D.), with a nearly even distribution of sites among the lowlands (21), midlands (18), and highlands (19). The coasts were not intensively settled, representing only three of the sixty known sites. This distribution pattern suggests that the initial settlers exploited all resource zones, presumably with different objectives in mind. By the Early Medieval period (1000–1104 A.D.), there were a total 95 sites, with a continued even distribution between the lowlands (35) and the highlands (31), with slightly fewer sites in the midlands (24). In the Sturlunga period (1104–1300 A.D.) this trend continues, with the total number of sites increasing

5 See also Chapter 4 for a full discussion on how the MSR was compiled and how each category was defined. The MSR catalog is divided by eight different site types, with site types 1–4 corresponding to domestic sites and 5–9 corresponding to non-residential sites. Geographic groups, defined by elevation, include: highland, midland, lowland, and coast.

TABLE 30 *All site types by location and time period considered in the SLP (n = 610)*

Elevation area	Time period					
	Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Coast	3	5	6	18	23	22
Lowland	21	35	46	136	169	136
Midland	18	24	36	146	164	127
Highland	19	31	52	115	183	143
TOTAL	61	95	140	415	539	428

to 140, and with an emphasis on lowland (46) areas and an increase in midland areas (36); for the first time, a slight majority of sites were to be found in the highlands (52).

State institutions are fully developed by the Late Medieval period (1300–1600 A.D.), and not surprisingly, this social transformation is reflected in a new landscape organization. By 1300 A.D., the number of overall sites dramatically increases, from 140 sites during the Sturlunga period to 415 sites. All environmental locales witness a dramatic increase in the number of sites, but the midlands (146) become the favored region for farmstead sites, followed closely by the lowlands (136), and lastly the highlands (115). The coast likewise experiences a modest growth in the number of sites, increasing from six to eighteen sites. By the Early Historic period (1600–1800 A.D.) the growth rate of new sites slowed considerably, with a total of 539 sites overall. In this period, the highlands (183), for the first time, represent the only region of considerable growth, followed by a nearly even distribution once again between the lowlands (169) and the midlands (164). By 1700 A.D., the number of sites began to shrink dramatically, as seen in the Historic period with a total of 428 sites, and a return to a more even distribution of sites between the lowlands (136), midlands (127), and the highlands (143).

6.2.1 *Farmstead Sites*

A total of 492 domestic farmstead sites were considered for this study (see Table 32). Farmstead sites are categorized⁶ by their size, their location, their elevation, and the time period(s) in which they were in use. Overall, the data

6 See Chapter 4 for a detailed discussion on how these categories are defined.

from the MSR indicate that the organization of the landscape has changed considerably over time, and that the farmstead system of pre-state Iceland is decisively different from the state system documented in 14th century.

There are only 34 type 1 (very large) farmstead sites for the entire thousand-year period considered in this study. Examining the distribution of these sites by elevation (coast, lowland, midland, and highland) in the Settlement period, there were a total of 13 type 1 farmsteads. Surprisingly, the area with the highest number of type 1 large farmsteads was the lowlands (6), followed closely by the midlands (4), and lastly the highlands (2). The coast has only one farmstead site in the Settlement period, a trend that will continue for the coast throughout the time periods surveyed here. These trends documented for the Settlement period continued into the Early Medieval period, but by the Sturlunga period, the midlands (11) became the region with the most type 1 sites, followed closely by the lowlands (8). The highlands would be home to only two type 1 sites throughout time. By the Late Medieval period, the midlands continued to have the highest number of large farmsteads (16), followed once again by the lowlands (12). The Late Medieval period was the latest new large type 1 farmsteads would be established. At the same time, however, very few type 1 farmsteads were ever abandoned, making these sites highly durable.

These same trends are seen if we examine type 1 farmsteads by geographic area, rather than simply by elevation (Table 30). From the Settlement to the Historic period, the location of type 1 farmsteads can be found in 14 of the 29 geographic areas surveyed here.⁷ No single region, however, is home to a majority of sites in the pre-state period; rather, the distribution of sites seems to conform more closely to elevation, indicating that the availability of certain resources is a likely consideration for the differential placement of type 1 sites. While no single region can be seen as the nexus of expansion and power in Skagafjörður in the pre-state period, a clear trajectory of development can be seen across the 29 regions, indicating that different regions were developed within distinct occupational phases. Farmsteads located along or near water

7 Seven in Blönduhlíð (Flugumyri, Frostastaðir, Hjaltastaðir-Syðstuhvammur, Miðgrund, Stóru-Akrar, Syðri Brekkur, Víðivellir, and Þorleifstaðir); five in Hjaltadalur (Efri-Ás, Hólar, Kálfsstaðir, Neðri-Ás, and Skúfsstaðir); two in Höfðaströnd (Hof and Höði – the only large coastal site); one in Kjálka (Flatatúnga); one in Kolbeinsdalur (Skriðuland); two in Langholt (Geldingaholt and Stóra Seyla); one in Neðri-byggð (Skíðastaðir); two in Óslandshlíð (Gröf and Ósland); one in Sæmundarhlíð (Sólheimar); three in Tungusveit (Hafgrímstaðir, Héradsdalur, and Lytingstaðir); one in Vesturdalur (Goðdalir); one in Viðmýrarpláss (Viðmýri); three in Viðvíkursveit (Hofdalir, Hofstaðir, and Viðvík); and two in Víkurtorfa (Reynistaður and Vík).

routes were the clear preference of site location in the Settlement period. These include coastal sites like Höði in Höðaströnd as well as sites like Stóra Seyla in Langholt located in close proximity of the Héraðsvötn River, a river with channels that ended their course at the sea. The Viking Age longship (*knarr*), with its low keel would have been able to sail along rivers like the Héraðsvötn, making possible the transition from sea to river and the exploration of inland areas by boat. The question then remains: were these sites established because they were the first areas that the settlers encountered, or were they established because these areas were located along watery highways? I will return to this question later in this chapter, but it is important to suggest here that if convenience was the motivation for farmstead establishment in these areas, we might expect to see a greater number of temporary, smaller sites to develop here followed a few years after the initial settlement by the development of large sites in areas more suitable for agrarian development; however, all of these sites develop into very large farmsteads⁸ quite early into their occupation and remain in use for well over a thousand years. In addition to these sites, two type 1 highland sites were established in the Settlement period: Flatatunga in Kjálka and Goðdalir in Vesturdalur. These farmsteads can be seen as gateway sites into the highlands, positioned directly within the transition zone between the midlands and the highlands. It is likely that as with Hjaltadalur and Viðvíkursveit, many of these farmsteads acted as hubs – centers of political, social, and economic interaction – that connected the highland and lowland areas, allowing for the possible communication among farmsteads as well as for the possible exchange of regional goods. These trends continued into the Early Medieval period, with additional type 1 sites in Hjaltadalur (Neðri-Ás) and in Langholt (Geldingholt). Also established at the same time were the farmsteads Stóru-Akrar and Þorleifstaðir, both located within close proximity to one another at the southern end of Blönduhíð, where the Héraðsvötn River ends and the elevation begins to steadily increase just before crossing over into the landlocked highland reaches of the Kjálka Valley. Looking at the placement of these sites, it is clear that they are strategically positioned within the landscape, controlling access to crucial resources areas and serving as points of contact among the coasts, the lowlands, the midlands, and the highlands within Skagfjörður, while also connecting Skagfjörður to its

8 It is not uncommon to find at the oldest occupational levels of these sites more temporary structures, often a pithouse, that may have served as shelters while longhouses were in the process of construction. Often, in fact, these pithouse features are incorporated into the layout of the longhouse or are located in close proximity, and are reused as workshops or storage facilities.

neighboring fjord valleys, linking all of Iceland together and ultimately linking Iceland with the wider world beyond the Atlantic. During the last pre-state phase, the Sturlunga period, type 1, large farmsteads were established in the Tungusveit, a corridor between the midlands and the highland valleys of the Vesturdalur and Austurdalur. The development of the southern end of Blönduhíð in the Early Medieval period continues here with the establishment of one type 1 Sturlunga-age farmstead, Skíðastaðir, located in the nearby region of Neðri-byggð. As with the Stóru-Akrar and Þorleifstaðir, Skíðastaðir is located in a transition zone, between the riverine highway and the landlocked inland interior. Overall these trends indicate that inland areas were growing in importance by the Sturlunga period, a trend that is intensified in the Late Medieval period when state institutions are fully developed.

A similar pattern can be discerned with type 2 (large) farmsteads, with a total of 56 sites over the time period considered here. Site distribution is clustered in the lowlands and midland areas of Skagafjörður. A total of 12 type 2 farmsteads were established during the Settlement period, with the highest number of sites positioned within the midlands (6), followed by the lowlands (4), and with the fewest number of sites in the highlands (2) and no sites on the coast. After the Settlement period, the lowlands will continuously have the highest number of type 2 farmsteads. As the lowlands consist predominately of marshes and bogs, which are not easily converted into pastures, these trends suggest that the early development of this region could indicate that interests other than livestock farming motivated its settlement during most of the pre-state period. In fact, the lowlands do provide a number of resources that could have attracted settlers. For example, most lowland areas are located alongside river valleys with diverse riverine ecosystems that could supplement a household's diet with wild foodstuffs, most importantly a variety of birds and fish, and other necessary household products, such as turf for building material, peat for fuel, and bog-iron ore for metalworking. The lowlands could also provide settlers with luxury items, including a wide variety of falcons, foxes, and sulfur. The lowlands were likewise located near the coastline making access to additional resources, such as driftwood, marine fish, dolphin, shark, whale, and walrus, another possible motivation for establish a residence in the lowlands. Type 2 farmsteads dominated the lowlands throughout the entire pre-state period. It is not until the Late Medieval period that this pattern changes, when type 3 (medium to small) farmsteads become the norm for the lowlands. This shift indicates a possible change in landscape use. Environmental reconstructions taken from the archaeological coring survey in Langholt,⁹

9 Carter (2003).

TABLE 31 *Farmstead site types by location considered in the SLP (n = 492)*

Elevation area	Farmstead site type				TOTAL
	Type 1 (n = 34)	Type 2 (n = 56)	Type 3 (n = 118)	Type 4 (n = 284)	
Coast	2	3	3	15	23
Lowland	12	27	50	95	184
Midland	17	19	42	92	170
Highland	3	7	23	82	115

Hjaltadalur, and Viðvíkursveit suggest that after 1300, the lowlands are drier,¹⁰ indicating that these areas had been drained and were likely being used for agrarian pursuits.

Type 3 farmsteads (mid-size) make up 118 sites for the time period considered here. There are 12 identified sites during the Settlement period, with five sites in the lowlands, five in the highlands, one site in the midlands, and one on the coast. During the Early Medieval period (18 sites), new sites are established only in the lowlands and in the highlands; during the Sturlunga period (29 sites), new sites are established only in the lowlands. Throughout the pre-state period, the type 3 farmsteads are supported by lowland and highland locales, with a clear preference for the lowlands in the Sturlunga period (see Table 32). This distribution changes during the Late Medieval period (109 sites) when the midlands dramatically surge from only six sites in the Sturlunga period to forty sites by 1300 A.D. Type 3 sites continue to increase in number throughout the lowlands (46), and less dramatically in the highlands (20) and on the coast (3). These data suggest different economic aims in lowland regions before and after state development.

Lastly, type 4 (small to very small) farmsteads represent the vast majority of sites, numbering 284 for the time period under consideration. Type 4 sites were not common in the lowland and midland locales of Skagafjörður until the Late Medieval period, but they were by far the most common type of farmsteads found in the highland areas from the initial settlement through the Historic

10 Drier soils were likely achieved from a combination of factors; namely, an increase in soil deposition in the lowlands as a result of erosion in the highlands, which dumped aeolian silts onto lower elevation areas (Carter 2003), along with the intensification of field production through the construction of ditches for draining the wetlands.

period. During the Settlement period, eight type 4 farmsteads were established, with six located in the highlands. By the Early Medieval period, this number had climbed in the highlands to 15 sites out of the 19 total type 4 sites in Skagafjörður. The Sturlunga period, however, can be seen as a transitional period, with an increase in type 4 farmsteads beginning to appear in the lowlands (up to 7 from 3) and the midlands (up to 4 from 1), and with a steady increase of sites in the highlands (26). The Late Medieval period, by contrast, had a total of 155 type 4 farmsteads, at which point type 4 became the most common type of farmstead in Skagafjörður. In comparison, there were a mere 33 type 1 farmsteads, 56 type 2 farms, and a healthy 109 type 3 farmsteads by the end of the Late Medieval period. These data suggest that by the Late Medieval period, medium and small farmsteads were favored – as was, arguably, an agrarian economy. While type 4 farmsteads are well represented in the lowlands (33%) and the midlands (39%), type 4 farmsteads make up an overwhelming 69% of the total domestic sites in the highlands. The site distribution documented in the MSR indicates that landscape use in the highlands differed from that of the midlands and of the lowlands throughout the pre-state period, but after 1300 A.D., landscape organization became more uniform, analogous to the trends that are documented for the highlands.

6.2.2 *Non-Residential Sites*

In addition to domestic farmsteads, non-residential economic sites, such as sel (*sheiling* or shepherd's huts) and activity areas (open-air ironworking areas, charcoal-making areas, weaving huts, etc.) can be found in Iceland from the Settlement period through the Historic period, with a total of 107 sites (46 sel sites and 61 activity area sites) considered for this study. As sel (site type 5) and activity areas (site type 6) are often located some distance away from household architecture, these sites unfortunately are systematically understudied and poorly understood. This is especially true of sel sites (Table 33), which are well documented for only the Early Historic period, but because the practice is thought to have originated in Scandinavia before the Viking Age they are assumed to have been used even as early as the initial settlement. Sel sites, however, have not been adequately identified in Iceland for the Settlement period;¹¹ in fact, the survey here revealed only two sites for the Early Medieval period (1000–1104). Both of these sel sites are located in the highlands, as was the common placement for sel sites in the Early Historic period. By the Sturlunga period, there are six confirmed sel sites, all located in the highlands. The presence of sel sites is a good indication of an economy grounded in

11 Sveinbjarnardóttir (1991); Sveinbjarnardóttir et al. (2006).

TABLE 32 *Type 5 sel sites by elevation over time (n = 46)*

Elevation area	Time period					
	Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Coast	0	0	0	0	0	0
Lowland	0	0	0	0	0	1
Midland	0	0	0	5	6	1
Highland	0	2	8	23	28	20
TOTAL	0	2	8	28	34	22

livestock-rearing, making it tempting to interpret this increase in sel sites as an indication of greater use and hence of greater emphasis on livestock during the Sturlunga period. We must, however, look at these trends with some caution until more archaeological data are available. The archaeological coring survey in Hjaltadalur, for example, revealed only two sel sites, both dating to the Late Medieval period; once again, we must await further research to either confirm or reject these trends as typical.

Data from the archaeological coring survey also suggest that specialized activity areas (site type 6) were a vital component in the pre-state economy, a trend that is likewise observed in other areas of Skagafjörður for which we have detailed archaeological information.¹² Overall, there are only six activity-area sites documented in the Settlement period, but it is difficult to assess whether this is a real trend or whether the low number of sites reflects the paucity of archaeological data (Table 34). Activity-area sites established during the Settlement period were durable, extending well into the Early Medieval period, but converted into farmstead sites or abandoned entirely by the Sturlunga period. New activity-area sites replace these during the Sturlunga period, suggesting that landscape organization and economy were in constant flux throughout the pre-state period. Activity-area sites were revived in the Late Medieval period, with a total of 27 sites, up from 10 in the Sturlunga period. These activity-area sites in the Late Medieval period are overwhelmingly connected to the bishopric at Hólar, with 11 sites alone located on the immediate

12 Austurdalur (Sveinbjarnardóttir 1992), Langholt (Bolender 2006; Steinberg and Bolender 2004, 2005), and Norðurárdal (Eldjárn and Friðriksson 2000).

TABLE 33 *Type 6 activity area sites by elevation over time (n = 61)*

Elevation area	Time period					
	Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Coast	0	1	0	0	0	3
Lowland	2	2	2	6	5	5
Midland	3	6	4	15	13	8
Highland	2	1	2	5	10	13
TOTAL	7	10	8	26	28	29

grounds at Hólar. Of the remaining 18 sites, the majority were storage areas (*bú*) for either the bishopric or for the growing number of nunneries and monasteries. Our knowledge of these Late Medieval sites comes primarily from documentary records, which we mostly lack for the pre-state period; conversely, we have a greater amount of archaeological information for pre-state activity-area sites than we do for those of the Late Medieval period. While the source type of our datasets differs for each period, reminding us that caution must be used in our overall interpretations, we can nevertheless suggest that the trends documented here indicate a surprisingly similar purpose for activity-area sites over time. While the church may have used Late Medieval activity-area sites, this does not necessarily imply that these sites were sacred; these sites no doubt served an economic function similar to that of the secular activity-area sites of the pre-state period. Archaeological and documentary evidence alike suggest that these sites were rarely multifunctional, but shared the primary purpose of operating as spaces for carrying out specialized tasks in support of the landowner's agrarian and non-agrarian needs. The range of tasks assigned to these places varied, from keeping cattle to manufacturing iron, but these tasks always extended well beyond the immediate subsistence needs of a household, indicating a degree of intensified specialization. These data suggest that even in the earliest phases of the pre-state period, social groups conformed along hierarchical lines: just as Late Medieval bishops could count on the labor of bondsmen, chieftains could likely do the same. This conclusion provides us with an innovative perspective on the Settlement period, as previous models have traditionally suggested that the initial social order in Iceland was more or less egalitarian.

TABLE 34 *Type 7 (trading sites), type 8 (pagan graves), and type 9 (assembly sites) by elevation over time (n = n)*

Elevation area	Site type	Time period					
		Settlement	Early medieval	Sturlunga	Late medieval	Early historic	Historic
Coast	7	1	1	1	1	1	0
Lowland	7 8 9	0 2 1	1 1 1	1 0 1	1 0 1	1 0 0	0
Midland	8	3	0	0	0	0	0
Highland	8	2	0	0	0	0	0
TOTAL		9	3	3	3	2	0

Also included in the SLP study was mapping the development of potential non-domestic central places (Table 35). These sites include trading harbors (site type 7), pagan graves (site type 8), and assembly sites (site type 9). Churches (a total of 54 sites) and prayer houses (a total 26 sites) are also likely candidates for central places, but due to their location within the property of active farmsteads these sites are categorized in the MSR principally as domestic areas, with reference to their additional ideological function.¹³

There are only two trading harbors in Skagafjörður known for the period covered in this study: Kolkuós (Viðvíkursveit), established at the time of settlement, and Hæringsbúðar (Borgarsveit), established during the Early Medieval period (1000–1104 A.D.). Located between these two harbors is the one known assembly site at Hegranesþing (Hegranes), established shortly after 930 A.D. Hegranesþing, located on a low bluff that overlooks the sea, is in direct view of both Kolkuós and Hæringsbúðar, with all three sites situated along the estuary of Skagafjörður. Trading harbors and assembly sites are places that facilitated interaction and exchange, economically as well as politically. In the absence of formal marketplaces, harbor sites were the places where local and foreign merchants set up shop for a few months every year, buying and selling goods as well as brokering networks of partners, allies, friendships, and even marriages. Likewise, the open meetings held at the Quarter Assembly site at Hegranesþing would have served not only as an impartial courtroom, but symbolically as a

13 For more information on the role of household, parish churches please see the discussion later in this chapter on Phase II landscape organization.

kind of social valve, performed through the act of a plaintiff and a defendant publicly airing out and resolving their conflict; the pressure and stress between individuals could thereby be mitigated in a structured and socially acceptable format. Taken together, these three sites would have welcomed travelers arriving by way of the sea, making them crucial gateways into the fjord throughout the pre-state period.

Pagan burial sites (8) could have potentially served a similar purpose for terrestrial travel, with sites occurring in lowland (3), midland (3), and highland areas (2). Pagan burial sites, easily recognizable by their artificial mound features, could have served not only as markers on the landscape but possibly as meeting places for travelers coming in and out of the area as well.

6.3 Organizing the Landscape: Evaluation of the Three Proposed Economic Models

Trends from the SLP reveal a number of surprising results. Contrary to the predictions made by previous models, the economic structure of the society was far more diverse and fluid throughout the landscape history of Skagafjörður. These data indicate that pre-state economic structure of Skagafjörður conforms more closely to a scale-free network rather than a clustered network, which provides us with several testable implications in the course of examining the process of secondary state formation in Iceland.

While small, self-sufficient, pastoral-agrarian farmsteads aptly describe the economy of the 17th century, this model cannot be applied to earlier periods. Instead, the data presented here suggest four distinctive occupational phases that, as I will argue, correspond well to local and global historical developments. The first phase of occupation occurs during the Settlement and Early Medieval periods (872–1104 A.D.) and is characterized by site selection in all environmental areas, dominated by the establishment of large- (site types 1 and 2) and medium-sized (type 3) farmsteads, with only the highlands documenting a significant number of small farmsteads (type 4). Throughout most of Skagafjörður, activity-area (type 6) sites seem to be used in lieu of small farmsteads during the first phase of landscape use. The second phase of occupation occurs during the Sturlunga period (1104–1300 A.D.) – the time when state institutions develop – and is defined by the intensification of specialized economic units in all environmental areas, as evidenced through the construction of permanent animal structures and enclosure walls as well as the steady increase in the number of small farmsteads. The intensification

of these sites¹⁴ coincides, I hypothesize, with economic changes found throughout 11th- to 12th-century Europe: the shift from an economy fueled by a limited and restricted supply of luxury goods, typical of a 'Viking Age economy', to one centered on the exchange of bulk staple goods at low cost, typical of a 'medieval economy'.¹⁵ The third phase of occupation occurs between the Late Medieval and the beginning of the Early Historic period (1300–1600 A.D.) and is delineated by the development of a full-fledged feudal system with tenant farmsteads under an ecclesiastical organization. Former activity areas¹⁶ were transformed into permanent small farms (type 4), alongside the development of newly established specialized activity areas – a complete reversal from the trends seen in the settlement period.¹⁷ As with Phase II, these trends follow those seen in Europe and especially in Scandinavia, where state institutions centered on a landlord-tenant arrangement, reaching their full maturity in the 13th century.¹⁸ The fourth phase (1600–1900) represents a steady decline in the number of overall sites, and is typified by small householders. This finding is crucial: while this phase of landscape use has been used as a model for overall economic structure in Iceland throughout time, the data presented here clearly dispute the utility of such models.

6.4 Phase I: A Viking Age Economy, 870–1050 A.D.

Iceland was settled by Norse colonists around 870 A.D., less than a hundred years after Scandinavian warriors stunned northern Europe with a series of raids in England that inaugurated the Viking Age. The sudden, swift brutality of these raids has received the most attention from ancient and modern historians alike, but the Viking Age overall was a period of intense interaction between the incipient kingdoms in northern Europe and the mighty imperial powers of the Muslim and Byzantine Empires.¹⁹ Violence among these polities

14 For example, these developments are seen at Bakki, Miklihöll, Langhús, Hólakot, Fornistekkur, Efri-Ás, Kálfsstaðir, and Hvammur.

15 Lopez (1976, 115–118).

16 For example, Hólakot, Hvammur, Kálfsstaðir, and Miklihöll.

17 We see this development unquestionably in Hjaltadalur with the establishment of sites such as Geitagerði and Kollugerði, which are located in close proximity to the bishopric at Hólar, and were used for the expressed purpose of supporting the agrarian demands of Hólar's large residence of craft specialists and members of the clergy.

18 Andrén (1989, 591–598).

19 Crumlin-Pedersen (1999); Hodges (1982); Hodges and Whitehouse (1983).

was not unknown, but for the most part, their interaction was centered on trade. Staple goods no doubt exchanged hands, but the trade of luxury goods is what defined these economic and social relationships. Gift-giving, the crucial power base and life force of chiefly societies, remained an important element in northern Europe even as the hallmarks of a market economy, such as coinage, urbanism, and regulated craft production, took a firmer hold. It was in this environment of travel, trade, and social connectivity that Iceland was settled, and while this migration is typically portrayed as separate from the ambitions of the Viking world, I will examine here the potential role that trading activities played in the motivation for colonization and in the initial social organization of the society.

6.4.1 *Textual and Archaeological Evidence for Trading Activities in Iceland*

While the Icelandic environment is often characterized as barren, there are a surprising number of potential export items that could have been utilized during the earliest phases of occupation. Available resources included, but were not limited to: falcons, sulfur, hides from sea mammals and foxes, and ivory from walrus tusks. The two commodities that would have garnered the highest price on the market were falcons and walrus ivory.²⁰ Both of these items are described in medieval texts as valuable commodities for export abroad. In medieval times, the gerfalcon (or gyrfalcon) was considered a royal bird, and was highly prized as far away as the Egyptian Sultan's court. The geographer and historian Ibn Said al-Maghribi (d. 1286) describes certain northern Atlantic islands west of Ireland (i.e., Iceland) where these falcons could be purchased at a price of 1,000 dinars for each living gyrfalcon; for those that died en route to Egypt, 500 dinars would still be paid per bird.²¹ Closer to home, Giraldus Cambrensis,²² archdeacon of Brecon and a chronicler, states that (ca. 1185), "this land [Iceland] produces and sends large and noble gerfalcons"; later, the Holy Roman Emperor Frederick II (ca. 1248) mentioned in *De Arte Venandi cum Avibus* (*The Art of Hunting with Birds*) that Iceland was the source for gerfalcons, which "are the best birds for hunting."²³ Likewise, objects made of elephant and walrus ivory were known in Europe as long ago as the Roman Imperial period and were, according to British medieval texts, a highly sought-after commodity in western Europe during the Carolingian Dynasty in

20 Batey (2005).

21 Montgomery (2008).

22 Gerald of Wales; thought to have lived between 1146–1223 A.D.

23 Giraldus Cambrensis cited in Gelsinger (1981, 13–14).

the 8th and 9th centuries.²⁴ Elephant tusk, consisting almost entirely of solid ivory, was preferred by craftsmen over walrus tusk, but was unavailable in Europe from the collapse of the Roman Empire until the mid-13th century.²⁵ The unavailability of elephant tusk increased the demand for walrus tusk, creating a thriving market for lands where walrus populations could be found in the north Atlantic and in the Norwegian Sea. Archaeological excavations in northern Norway and Greenland, for example, have uncovered evidence of processing sites, where large numbers of walruses were hunted at an industrial scale, presumably for their tusks and hides for export, as these faunal elements are typically lacking in the overall assemblage.²⁶ The availability of a lucrative commodity in a period of widespread trade in the Norse world could have been a strong pull towards establishing small colonies in the North Atlantic throughout the late 8th and 9th centuries, but it has traditionally been viewed that walrus populations were never abundant in Iceland²⁷ – certainly not in numbers large enough to have drawn settlers. Ongoing research on the migratory patterns of sea mammals in the North Atlantic, however, has shown that the northern and southern shores of Iceland today are home to seasonal walrus breeding sites, a stopping point along their migratory route from Greenland to Norway.²⁸ These data suggest that walrus populations might have been exploited in the past. In fact, recent archaeological excavations have begun to reveal evidence of small, seasonally occupied camp sites in Iceland located near these known walrus breeding areas, perhaps as early as the start of the 9th century, a good 70 years before the widespread colonization began.²⁹ For example, at the site Tjarnargata 4, a dense concentration of adult and baby walrus fauna have been recovered, indicating that there were breeding grounds within the Reykjavík area.³⁰ These resources were clearly exploited in the Settlement period as demonstrated at the 9th-century site of Aðalstræti,³¹ located within a few miles of Tjarnargata 4,³² where three large mature walrus

24 Gaborit-Chopin (1992); Rosedhal (2003, 2005, 2007).

25 Pierce (2009, 60).

26 Þorláksson (2007).

27 Sawyer (1984, 44).

28 Reijnders et al. (1993).

29 Perdikaris and McGovern (2007, 2008).

30 Pierce (2009, 59); Vésteinsson et al. (2002, 111).

31 Roberts (2001).

32 Some of the earliest known sites are located in the Reykjavík area (Nordahl 1988). It is difficult to assess whether the trends and frequency of finds documented in Reykjavík are indicative for other areas of Iceland – Reykjavík overall has been more intensively excavated than any other region in Iceland.

tusks, expertly extracted, were discovered.³³ These tusks would have yielded a high market value, so it is surprising that they were neither exported nor used locally.³⁴ Their presence may in fact demonstrate greater availability of walrus resources than was previously believed, availability to the point that three large tusks could be discarded, unused, or saved for a later date apparently without much concern. Discoveries of sites dedicated to the procurement of raw materials for long-distance trade are growing in number. These data, combined with settlement pattern analysis, all indicate that trade was an important activity early on in Iceland. These data suggest that economic interests motivated the colonization of Iceland; these interests must then be considered when examining the formation of state institutions during the subsequent phase in the Sturlunga period.

In addition to luxury goods such as falcons and ivory, hard-to-procure items such as sulfur may have also contributed to the Icelandic export enterprise. Iceland is the only location in northern Europe where sulfur is available, which made it a highly valuable mineral commodity in Iceland once gunpowder was used in the West, but it is also possible that sulfur was in demand much earlier during the Viking Age by the Islamic scientists with interests in alchemy. Little research has been done on this topic, but interestingly sulfur deposits have been found at Kolkuós in some of the earliest phases of the site.³⁵ Sulfur mines are located quite some distance away from Kolkuós, meaning that the deposits found there were likely present for trading purposes.

Foreign textual accounts that describe commodities available in Iceland and archaeological evidence of processing raw materials for trade are supplemented by a number of economic documents between Iceland and its trading partners, especially Norway. The first known commercial agreement made in Iceland dates to 1022 and concerns fixed numbers of ships coming into Iceland from Norway.³⁶ The agreement provided a guarantee of exchange between the two partners, with woolen goods leaving Iceland and grain and sumptuary goods coming in. Along with this guarantee, Icelanders were granted special privileges while aboard. According to the terms of the treaty, Icelanders traveling to Norway were to be granted the same legal standing as that of Norwegian citizens, a privilege implying that Icelanders were considered distinctly as Icelanders and not as legal members of the Norwegian state. This included granting Icelandic merchants access to water and forest resources while they

33 McGovern (2001).

34 Pierce (2009, 58–59).

35 Baldursdóttir (2009); Traustadóttir (2004).

36 Gelsinger (1981, 69–72).

were staying in Norway. Interestingly, if an Icelander remained in Norway for three consecutive years, that individual's social rank and right to certain privileges were to be reduced to that individual's actual social standing: that of an outsider who likely owned no land. This suggests that the Norwegian Crown was eager to see Iceland populated, rather than to have the Icelandic descendants of former Norwegian citizens permanently return to Scandinavia. One could interpret this clause of the treaty as an indication that the Icelandic economy was seen as valuable to Scandinavian markets. Likewise, under this treaty Icelanders were also allowed to travel to any country under the protection of the Norwegian king, once again indicating that trade and travel were deemed to be of high importance. It also indicates, that Icelanders, while viewed as separate from Norway, were still intimately connected to the king. To be sure, there is no indication that these individuals were in direct service to the king in a hegemonic, imperial relationship; rather, the terms of this treaty suggest that merchants from Iceland were more or less independent agents who frequently sought political and economic backing from Norway. In exchange for these privileges abroad, Icelanders were required to pay a landing fee (*landaurar*) when they arrived and were obliged to assist with defending Norway in times of war. The *landaurar* was waived if one had already paid a fee for landing in the Shetlands or other nearby islands, if most of the ship's cargo had been lost at sea, or if a ship had been run off course and had to make an emergency landing in Norway. In actuality, the fee had little to do with harboring a ship and everything to do with buying and selling goods. It is possible that this same fee was applied to Norwegians who entered Iceland. Medieval historian Ári Þorgilsson states that the fee originated under King Harald in the 9th century:

[E]very man who traveled here [Iceland] from there [Norway], unless exempt, should pay the king five aurar³⁷ ...This was the origin of that tax which is now called the *landaurar*; and sometimes more and sometimes less was paid until Ólaf the Fat [the Saint] commanded that every man should pay the king half a *mörk* [four aurar] who traveled between Norway and Iceland except those women and men whom he exempted from it.³⁸

Additional exemptions were made, however, if Icelandic merchants were first "going to Greenland or were looking for new land, or if their ships drifted

37 Aurar is the plural of *eyrir*, an ounce of silver.

38 *Íslendingabók*, chapter 1.

off-course.”^{39,40} This exemption clearly illustrates the continued lure and push of the Viking Age economy, one defined by the constant search for new lands, new markets, new wealth, and new fame.

Archaeological sites in Norway, especially those located in Trondheim, likewise indicate that trade between Iceland and Norway occurred during the early phases of economic development in Iceland. *Merkelapper* (mercantile labels) with runic writing styles typical of those used in Viking Age Iceland⁴¹ have been found in association with small ivory carvings that were made from walrus species native to the waters around either Iceland or Greenland. Additionally, a few extant price lists likewise indicate that Icelandic luxury goods, such as falcons, were brought to Scandinavian markets.⁴² While mercantile labels and price lists are a rare discovery, their age and association with sought-after luxury products indicate that trade between the North Atlantic and Scandinavia was an active engagement throughout the 9th and 10th centuries.

6.4.2 *Regional Analysis of Skagafjörður*

The existing textual and archaeological data from the period of settlement hint at the possible importance of trading activities among the first few generations of settlers, but what remains to be seen is whether there was a social structure in place to facilitate these activities in any significant way. The data presented above cannot refute the claim that trade was anything more than a limited enterprise, with sumptuary laws explicitly designating the exchange of luxury goods as an activity reserved solely for the elite. If commercial pursuits, whether prominent or minor, played any role in the organization of the society, then we should expect these activities to be documented in the pattern of landscape organization.

Phase I data from both the MSR and the coring survey from Hjaltadalur and Viðvíkursveit illustrate a diversified economy with the occupation of all environmental regions immediately from the beginning of settlement, a similar pattern of landscape use documented in Iron Age Norway⁴³ that led to the

39 Þorláksson (2001).

40 “Ef þeir menn verða sæhafa i noreg er vart hafa til græn landz eða fara í landa leitan eða slitr þá út fra islandi þa er þeir vilde færa scip sin mille hafna.” This text is from an 11th-century source from the court of Norwegian King Ólafr Haraldsson (killed 1030 A.D.) and was recorded in a version that Helgi Þorláksson suggests might be from the 1080s (Þorláksson 2001).

41 Christophersen and Nordeide (1994, 248).

42 Gelsinger (1981).

43 See Chapters 1 and 7 for a discussion on site distribution in Iron Age Norway.

development of extensive local and external trade systems (see Figure 56 and Table 36). Previous models that focus either on isolation and self-sufficiency or on hegemonic regimes fall short of explaining these settlement trends. The Autarkic Model suggests that the highlands, an area amenable to the development of pastures, would have been the preferred locale for the first wave of colonization, and that the initial social order would, by necessity, have been more egalitarian than the homeland that these settlers left behind. In contrast, settlement pattern data document that the highlands, if anything, were slow to develop; rather, the lowlands and midlands were the preferred locations for the majority (63%) of the earliest farmstead sites. Likewise, the social organization during Phase I exhibits a hierarchical structure, with the establishment of very large, type 1 farmsteads, alongside smaller households (see Figure 56). Furthermore, the settlement data also illustrate multiple possible elite centers of power, suggestive of a more heterarchical political economy throughout Phase I. Under these configurations, the structure of power was likely exercised within a pyramidal series of segmented elites tied together by alliances, shared interests, and perhaps a degree of dependency. This structure is far from egalitarian, but is likewise a far cry from intense hierarchy. Therefore, the Imperial Economy Model likewise falls short of elucidating the settlement pattern trends documented in Skagafjörður. As the Imperial Economy Model suggests that Iceland was a colony strategically deployed by order of the Norwegian crown, the settlement pattern data should demonstrate an orderly and planned colonization, with equal spacing between sites; however, aside from the strategic positioning of a few crucial hub or central-place sites, there appears to be only a minimal degree of structured organization to the placement of farmsteads, representing a frontier setting rather than a planned colony.

We can conclude, however, from these data that household economies were more heterogeneous than has been previously suspected, and that there were striking differences in economic strategies that seem to correspond well to environmental parameters. For example, data from the intensive survey suggest that the initial Settlement and Early Medieval periods are defined by at least two separate, but perhaps interconnected economic strategies between highland and midland/lowland sites. Highland farmstead sites on average are smaller than those found in lowland and midland environments, with type 3 and 4 farmsteads making up 73% of highland sites established in the Settlement period and 85% by the Early Medieval period. By comparison, type 3 and 4 farmsteads make up only 38% and 15% of sites in the lowland and midland regions respectively during the Settlement period, rising to 46% in the lowlands and decreasing to merely 13% in the midlands during the Early Medieval period. These settlement pattern trends indicate that the socio-economic

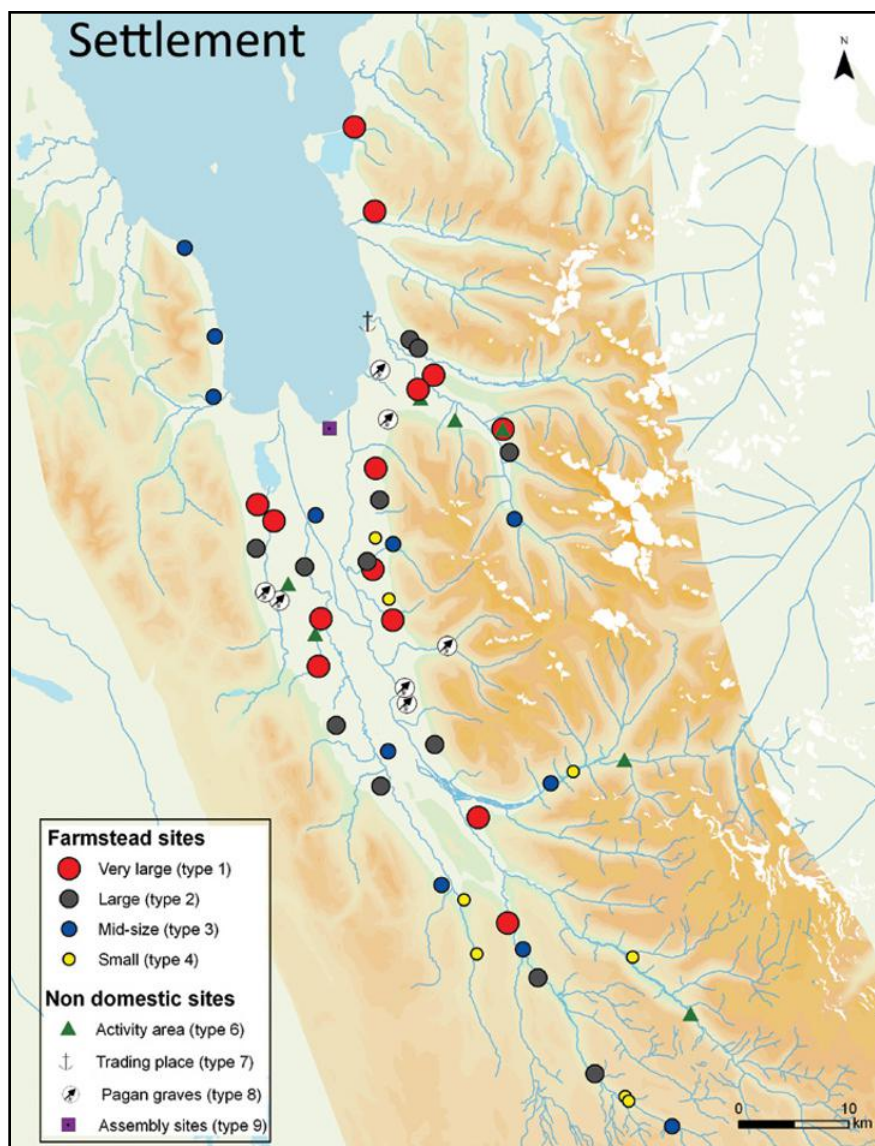


FIGURE 56 Sites ($n = 61$) in the Settlement period (870–1000 A.D.)

organization of highland farmsteads during Phase I was decisively different from sites in the lowland and midland regions. On the whole, the data suggest that highland sites were organized around small-scale agrarian pursuits, a hypothesis further supported by archaeological evidence documenting the presence of small households and outhouses for animals, suggestive of a rural

TABLE 35 *Phase I farmstead sites (n = 71)*

Region	Type 1	Type 2	Type 3	Type 4	TOTAL
Coast	1	2	1	0	4
Lowland	7	7	9	3	26
Midland	7	6	1	1	15
Highland	2	2	7	15	26
TOTAL	17	17	18	19	71

economy centered on livestock-rearing.⁴⁴ The midlands and lowlands are, on the other hand, dominated by larger households and a mixed economy of subsistence farming alongside non-agrarian, specialized sites, such as those documented in Viðvíkursveit, where the placement of farmsteads corresponds well to available resources that were likely exchanged at the Kolkuós trading center. The differences in economy and household organization between regions is likely the result of a number of factors, but one prominent variable that must be considered are the environment constraints of each region. The shallower, silty soils and lower temperatures typical of the highlands likely contribute to the preference for smaller households, while silty, clayey soils and warmer temperatures likely contribute to the preference for larger households in the lowland and midland regions of Skagafjörður. We must, however, also consider that these environmental zones offered an array of different resources that transcend the immediate needs of a household, and that the desire to acquire these resources for the possibility of trade, both local and global, was a factor in the locations for the establishment of farmsteads during Phase I. Lastly, the data here imply that sites did not exist in isolation from one another, but instead, were connected and linked together as a cohesive networked system.

One means for keeping the society connected was informal exchange alongside more formal trade between farmsteads and between regions. One surprising trend discovered in the MSR is that the overwhelming majority of farmsteads were located along or near sea and river routes, suggesting that maintaining mobility and possibly a connection to a larger world remained a priority throughout the first phase of occupation. Dotted along these watery highways were a number of nodal and hub sites that could have facilitated social and economic exchanges. The most important nodal sites were the

44 Sveinbjarnardóttir (1992).

harbors at Kolkuós and Hæringsbúðar, as well as the assembly site located between the harbors at Hegranes, which also served as a location for exchange. In addition to these nodal sites were a number of potential hubs, such as the large farmsteads sites Viðmýri and Stóra Seyla located along the Héraðsvötn River, which could have likewise served as centers of interaction. In addition to sites along water routes, hub sites were positioned at key terrestrial junctions, such as those marking the boundary between the midland and highland expanses of Skagafjörður, including the large type 1 farmsteads of Goðdalir and Flatatunga (see also Chapters 5 and 7). Lastly, there is one known major assembly site⁴⁵ in Skagafjörður at Hegranes, a spot chosen no doubt for its close proximity to Kolkuós. The end result was a highly connected network of farmsteads across diverse eco-zones, poised for exchange for vital household resources as well as supplying possible goods of high social capital through the redistribution of luxury items acquired both locally and abroad.⁴⁶

Examining multiple lines of evidence – settlement pattern trends, archaeological excavations, and textual accounts – within a network model leads to the suggestion that the first phase of landscape use in Iceland was committed to supporting long-term colonists as well as acquiring materials that could be exchanged in both local and global trade networks. Within Iceland, goods acquired were likely included in a chief's arsenal for maintaining power, wealth, and prestige. Among Iceland's early political elites, a prominent role was likely played by redistribution – an activity that depended heavily on a chief's ability to grant gifts of land and luxury goods and to host feasting parties. By the end of Phase I, however, clear changes to the political economy are clearly underway. During the Early Medieval period, the number of type 1, 2, and 3 farmsteads increases only marginally in all environmental regions (see Figure 57 and Table 36), but the number of type 4 farmsteads in the highlands more than doubles. This shift in settlement trends reflects possible economic changes within Iceland, with a push toward increased agricultural production. While environmental degradation models (see also Chapter 2) would likely interpret these trends as support for the hypothesis that a deterioration of the landscape prompted the development of smaller farmsteads and ultimately a system of land tenure, I will investigate in the following

45 Assembly sites were central places where legal disputes could be brought before lawmen at specific times of the year (see also Chapter 1).

46 Zooarchaeological data from Mývatnssveit (northeastern Iceland), for example, has discovered the presence of "substantial amounts of marine fish bone on sites up to 70 km from the coast" (McGovern 2009: 226). These data strongly suggest the presence of local trade networks.

section whether these trends document the beginning of a shift away from a Viking Age economy to a medieval economy that centered on the surplus production of staple goods.

6.5 Phase II: A Medieval Economy, 1050–1300 A.D.

By the beginning of the 12th century, Icelandic society was caught up in a whirlwind of social change that would forever shape the structure and character of the nascent Icelandic State. Historians, drawing upon the descriptions of Icelandic society as depicted in the *Sturlunga saga*, have characterized this period of Icelandic history as one of social chaos and violence, as rivaling elite families battled for supreme authority and consolidation of power over all corners of Iceland. By the 13th century, the number of *goðar* (chieftains) in Skagafjörður was rapidly dwindling, as members of the powerful Ásbirningar family from the west systematically killed off or bought out rivaling *goðorð* (chieftain positions), setting into motion the emergence of the *storgoðar*, the so-called ‘big chiefs’⁴⁷ who consolidated their holdings within well-defined domains of political authority known in Icelandic as *ríki*.⁴⁸ *Storgoðar*, however, are thought to be ‘new elites’, not the descendants of elite settlers, suggesting that a new avenue for power had opened up by the *Sturlunga* period. In fact, it was within this environment that Iceland adopted a monotheistic religion, a standardized system of writing, a land tenure system, and formal systems of taxation – traits that most anthropologists would categorize as signs of state-level administration. What is unclear, however, is how and why these institutions developed by the 12th century (see also Chapter 1). This question has been addressed by a number of theoretical models, including those centered on the co-evolution of environmental degradation and social hierarchy (see chapter 2) and those focused on the hegemonic power of a distant Norwegian monarchy (see chapter 3). The one area of agreement among these models is that the events of the *Sturlunga* period, however startling, were the culmination of social processes that began centuries earlier. In the following discussion, I will address this question from an economic perspective, examining the potential role of new long-distance trading opportunities in the local development of new social configurations.

47 In many ways, *storgoðar* resemble paramount chieftains, such as those documented in 18th-century Hawaii (see chapter 2).

48 Sigurðsson (1989).

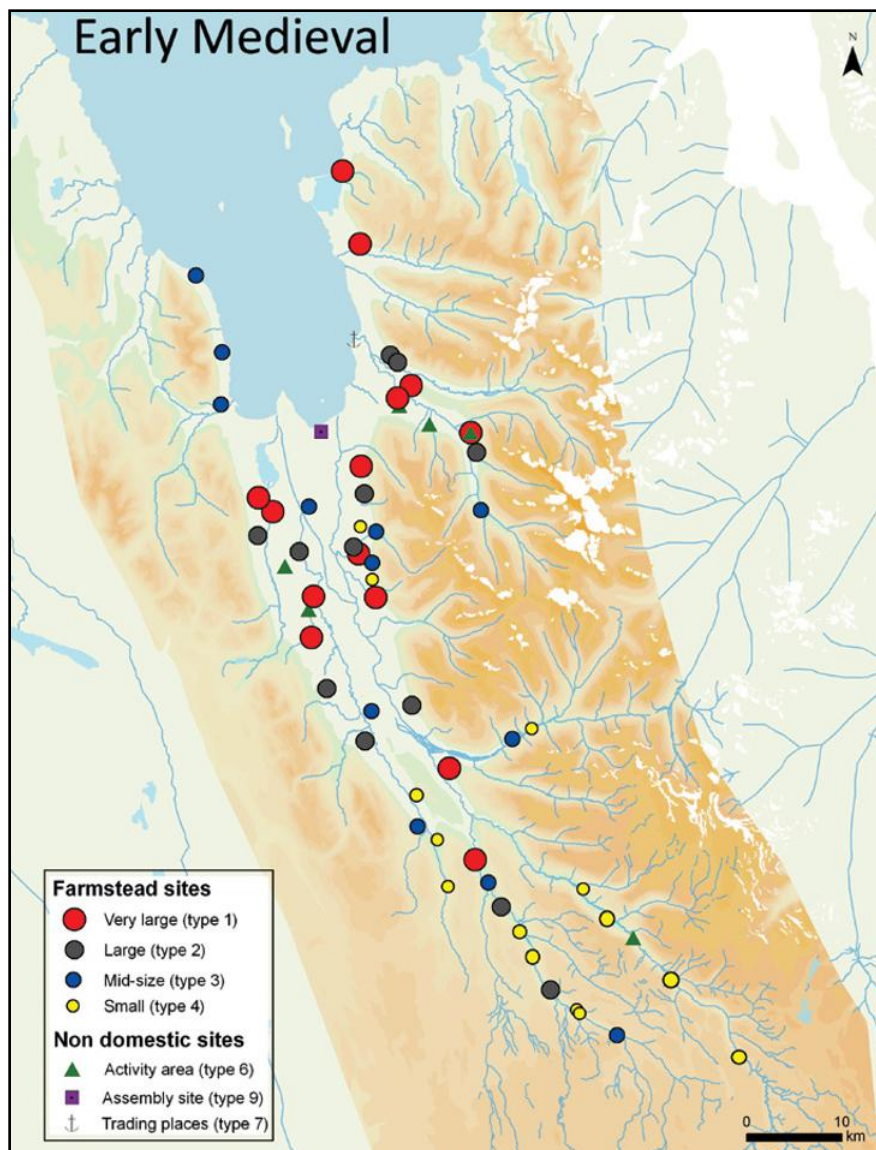


FIGURE 57 Sites ($n = 95$) in the Early Medieval period (1000–1104 A.D.)

6.5.1 *Textual Support for the Importance of Trade*

Historical accounts document broad patterns of economic change in Europe coinciding with the last of the Viking raids around 1050 A.D.⁴⁹ In Scandinavia, economies of loot and plunder were replaced with intensified agricultural production and a greater focus on craft specialization,⁵⁰ both of which were used to generate surpluses that could be brought to local and external markets.⁵¹ Unlike farms in Norway and the British Isles, however, Icelandic farms were not likely to have been able to produce storable agricultural produce, such as grain, in surpluses large enough to entice trade partners.⁵² Instead, in looking for a storable commodity that could be produced above a household's needs and put to market, Icelanders found the solution in their traditional pastoral economy: sheep. While lamb, mutton, and secondary dairy goods never found an international market, lambskins and fleece spun and woven into cloth certainly did.

Within the parameters of a Viking Age economy, Iceland was likely a small player on the global scale. Walrus ivory and falcons were not unlimited resources, nor was it easy to acquire or control access to these items. By the 11th century, however, the Viking Age economy collapsed and was replaced by a 'medieval economy' based on the bulk distribution of everyday subsistence goods.⁵³ In a medieval economy, Iceland, with its potentially productive wool and fish industries, could be a competitor. Throughout the 11th and 12th centuries, medieval texts, especially those from Scandinavia, hint at Iceland's potential to become one of the leading producers of wool for European markets.⁵⁴ Back home in Iceland, the ability to acquire goods from abroad could be used to fuel a chiefly economy of reciprocal gift exchange and redistribution at local levels of political administration.

Of all the possible sheep-based staple goods that Iceland could export, *vaðmál* (homespun cloth) was the most likely candidate for commercialization in the mid-11th century.⁵⁵ As a commodity for long-distance exchange, Icelandic *vaðmál* has a long history and was a well-known item even in Viking Age luxury markets throughout northern Europe, often praised as a superior

49 Graham-Campbell (2001, 194).

50 See Costin (2001) for a discussion on the role craft production plays in engendering social inequality.

51 Hjalmarsson (1993, 50).

52 Byock (2001, 82).

53 Lopez (1976, 115–118).

54 Gelsinger (1981).

55 Þorláksson (1992, 2000).

waterproof cloth.⁵⁶ *Mórent* (brown-striped cloth) and *hafnarvaðmál* (finer cloth used for making clothing) were particularly popular abroad, but *röggvarfeldir* and *vararfeldir*, the so-called shaggy coats made by braiding shaggy tufts of wool to imitate closely the pelts of squirrels or other wild animals, were by far the favored form of vaðmál.⁵⁷ Icelandic vaðmál was also a favored source for making strong, water-resistant sails. The popularity of Icelandic vaðmál serves as a possible explanation for how, even as early as the reign of King Ólafr the Saint (1015–1030 A.D.), cloth could be used to pay the landing-toll fee in Norway. By the beginning of the 12th century, *vaðmál* was produced in surplus and was quickly standardized and chosen to replace silver as a medium of exchange.⁵⁸ By the end of the 11th century, the manufacture of *vaðmál*, produced by households, thus became Iceland's principal overseas export.⁵⁹ Economic texts suggest that Norway was Iceland's primary consumer of woolen goods,⁶⁰ with Norwegian luxury imports, such as flour for making bread, grain for making beer, timber for house construction, wax, tar, and embroidered clothing and tapestries, flowing into the country; these luxuries likely became part of the chiefly systems of redistribution but were also used to further articulate the power of a growing aristocratic class within all areas of Iceland.⁶¹ Vaðmál served as a means for acquiring coveted, socially charged goods that could not be found directly within the ecology of the island; therefore, vaðmál itself became a valuable currency, transforming the everyday material of wool into the premier symbol of elite power.⁶² This system of exchange was intensified by both local and global factors. Locally, once all the land in Iceland had been claimed, chiefs were forced to rely more regularly on imported luxury goods in order to sustain and maintain their alliances, ultimately leading to more intense and more frequent competition and perhaps even inculcating a greater desire for intensified long-distance trade within the NET. These demands were met by an increased market demand for cloth abroad. It is this confluence of local and global variables that powered social change in Iceland. These changes are captured in the physical transformation

56 The waterproof capability of Icelandic wool is likely the result of its high lanolin (wool wax or wool fat) content, an extremely successful adaptive trait for sheep living in Arctic environments.

57 Gelsinger (1981, 12).

58 Jochens (1995, 141–160).

59 Gelsinger (1981, 61–89); Miller (1990, 328–331).

60 Gelsinger (1981, 159–180).

61 Harte and Ponting (1983).

62 See Crabtree (1996) for a comparative study in Middle Saxon England.

of the landscape with a shift towards smaller farmsteads alongside large manorial estates.

Not only is the social importance of vaðmál reflected in the law codes, but so, too, are the political actions taken to standardize the economy by regulating the production of cloth during this second phase of landscape evolution. In order for vaðmál to serve as a monetary currency with reasonable efficiency, standards of weight and measurement of vaðmál had to be observed. The basic units of measurement were the long *öln* (English ‘ell’, from the Latin ‘ulna’), roughly the length of a grown man’s forearm from elbow to fingertips, and the short *öln*, which was the length measured from the elbow to the thumb.⁶³ As cloth became the primary medium of exchange, even more precise means of measurement were necessary. The *Grágás* report attempts throughout the island to standardize measurements.⁶⁴ By 1100, the long *öln* measured about 22 inches, but was not as widely used as the shorter 18-inch *öln*, which became known as the ‘legal *öln*’.⁶⁵ To achieve greater consistency and standardization for the measurement of a single *öln*, it was reasoned that “the longer the measurement, the more exact each smaller unit within it would be, and so the *stika* (stick) of two short ells was commonly used.”⁶⁶ Likewise, *Grágás* state that “in accordance with the General Assembly regulation it is standard value that in one ounce-unit there shall be six ells of valid homespun, new and unused” (K246). These laws clearly demonstrate market concerns and the attempt to regulate the tempo of an export economy.

Further evidence of economic commercial standardization and the development of a centralized bureaucracy can be found in the *Diplomatarium Islandicum*, a collection of Icelandic and foreign documents up to 1570 A.D. that includes commercial agreements, deeds, church inventories, and separate laws and proclamations concerning the economy (see also Chapter 4). These texts indicate that all goods exchanged within Iceland had a standardized an ell value.⁶⁷ For example, a steel-edge scythe-blade was equal to two-ounce units of silver or the equivalent of 12 ells of homespun; further, the length of the scythe-blade was also standardized by ell measurements, stating here that the blade must be one long-ell in length.⁶⁸ Vaðmál, therefore, served not only as legal tender, but also as a system of weight and length measurements; thus,

63 Gelsinger (1981, 35).

64 *Grágás* K § 245.

65 Ibid.

66 Gelsinger (1981, 35).

67 Ibid., 41.

68 *Grágás* K § 246.

any item, from a cow to a coat, could be appraised by its weight in ounce-units and its long- or short-ell length.

The *Grágás* also describe how vaðmál was to enter into an international exchange system: vaðmál could be bought and sold at the local assembly meetings. All heads of households were required by law to attend their local assembly meetings twice a year and to pay a tax to their chief while attending these meetings.⁶⁹ Chiefs, therefore, were able to ensure the presence of households at the assembly meetings, and if these households were able to make a profit from their vaðmál, chiefs were there to collect a share of it.⁷⁰ That assembly meetings were mandatory suggests that elites were directly involved in the exportation of vaðmál, not only from their own households, but also from all households within their jurisdiction. Regulation over the buying and selling of vaðmál is likewise demonstrated by tighter control over harbor sites. An examination of medieval documents from Iceland and Norway suggests that there were at least 41 trading harbors before 1100 A.D.; however, in the period between 1100 and 1225, trade vessels were sailing to fewer and fewer ports, controlled by fewer and fewer chieftains.⁷¹ Archaeological and documentary evidence confirm that the number of operating trading ports sharply declined during the 12th century, alongside the expansion of a few key sites, such as Kolkuós and Gásir in the north. In fact, after 1100, documentary sources only mention eleven ports in use; by 1200 there were only four, and by 1225, only two.⁷² Localized models have tended to view this steady decrease in the number of commercial harbors as an indication of a break in the market economy; however, when the data are examined within a broader social framework, this trend signals a tightening of control over trade, presumably by elites.

Not only was the buying and selling of vaðmál controlled, but so, too, was its production. While there are a few references to professional weavers (*búalög*), it is likely that the bulk of cloth production was performed by householders, whose labor could in fact be controlled. For example, the *Grágás* clearly stipulate laws aimed at controlling the economic activities of the producers of vaðmál, specifically to the daughters and wives living in a man's household. As discussed in chapter 3, the rights of women were severely curtailed in the 12th century as documented in proscriptive marriage and inheritance laws. These changes likely reflect an economic concern over the production and distribution of woolen goods. While women may have been important producers of

69 Byock (2001, 54).

70 Ibid., 54–56, 171–178.

71 Þorláksson (1979, 127–128; 1992).

72 Byock (2001); Ingimundarson (1995, 54).

cloth, they were not the primary merchants and traders of their products; men became the brokers and the public persona of the cloth industry. The *Grágás* corroborate an image of women as being consigned to the household: "When a man and a wife are in wedlock, he shall have charge of their property and all buying and selling. It is not required of a wife that she should own a share in the household, but if she has a share in the household with him, then she is to run the indoor household as she wishes and the dairying."⁷³ The *Grágás* also state that: "A woman is not permitted to sell goods at the assembly (market-place), unless it involves joint money matters and her husband is unable to attend the assembly and has given her his permission to stand in his place. A woman can only buy household necessities if her husband is at the assembly."⁷⁴ Further, the *Grágás* restrict a woman's ability to go on merchant voyages to Norway: "A woman can travel to Norway only if she is accompanied by her husband, father, brother, or son and if she pays three marks (Norwegian currency)."⁷⁵ Lastly, the *Grágás* also suggest that the spending ability of women was closely regulated: "A woman is only allowed to spend an ounce-unit of six ells in a year. If she spends more, her husband can revoke that right and a fine can be placed on a man who sells her goods a sum bigger than prescribed."⁷⁶ From the *Grágás* we can perceive that the economic labor of women was highly prescriptive by her male guardian; legal measures granted a man economic control over the women in his household, and therefore, by extension, control over homespun production. Within the domestic sphere, however, we might speculate that a wife could hold considerable sway over the ambitions of her husband, as she it was who provided him with the social and economic currency of cloth upon which he depended for his ability to participate in the political economy. The contemporary sagas are woefully silent on the attitude toward women as weavers; however, *Sturlunga saga* does report some 50 cases of marriage, with wives often praised for their ability to suitably run the household and for their ability to weave fine *vaðmál*.⁷⁷ Through cloth, a woman could not only set the pace and tempo of the household economy; her labor and skill as a weaver were also an integral component of the public world of commensality and politics, as men depended on her labor to provide them with the ability to finance the necessary feats to broker alliances.

73 *Grágás* K § 152.

74 *Ibid.* § 153.

75 *Ibid.* § 248.

76 *Ibid.* § 153.

77 Damsholt (1984, 76); Jochens (1995, 153); Þorláksson (1992).

Lastly, the importance of wool is expressed through a new form of taxation: the *sauðakvöð*⁷⁸ ('sheep tax'). The *sauðakvöð* was a percentage of the revenue grossed from selling wool and was typically paid by tenant farmers to the elites who owned their land. The *sauðakvöð* was the first⁷⁹ secular remunerative source of income in Iceland, as all of the revenue remained in the hands of a landowner who could choose how to reinvest the income. Byock has argued that the *sauðakvöð* was either collected by chiefs who were in "dire need of funds"⁸⁰ or was crafted to suppress the activity of foreign merchants while in Iceland;⁸¹ it is also possible that this tax was designed to control trade, serving as a tool to prevent farmers from doing business with merchants on their own, thereby ensuring that elites always received a share of the profits. If chiefs could not prevent this trade, they could at least indirectly tax it. The fact that these taxes do not appear until the mid-13th century and that they are aimed at wool is a telling reflection of the changing international medieval economy. Revenue from the *sauðakvöð* and the tithe would have generated a tidy sum of extra income for a growing aristocratic class within Iceland, all of which was potentially fuelled through a rural economy responding to local and global market demands.

While the totality of these textual lines of evidence expresses the importance of wool production for an international market, critics are quick to rejoin that the documentary record, while tantalizing, is scant and cannot conclusively indicate whether the medieval Icelandic economy was ever fully committed to commercial pursuits. From these data it is not unreasonable to conclude that trade was only a minor economic occurrence mentioned incidentally in a few texts but by and large did not shape the rhythm and flow of everyday household activities. Additional lines of evidence are needed in order to gauge the degree and intensity of surplus production during the Sturlunga period. I suggest that archaeological research on economic production, documented in the material evidence for herding strategies and landscape

78 All documentary references to the *sauðakvöð* appear towards the middle of the 13th century (Byock 1988: 78). *Sauðakvöð* is mentioned most frequently in the *Sturlunga saga* (c.1230–1245).

79 There were two types of 'taxes' or fines collected during Phase 1: the *þingfararakaup* (þing travel tax) and the *hoftollr* (temple tax). Only a chief could collect these, but in return for these payments a chief was required to front substantial costs (see Chapter 1). Arguably, the chief did not profit financially, and may have even incurred additional costs; however, the chief likely received a form of social capital in return for these enterprises, ensuring good relations between himself and his followers.

80 Byock (1988, 78).

81 Byock (2001).

organization, can be a fertile avenue for examining the possible importance of trade in the medieval Icelandic economy.

6.5.2 *Zooarchaeological Evidence and Economic Production*

Faunal material found in archaeological contexts are an insightful tool for examining past social behavior, as the types of animals present at a site provide information about the diet, social status, and economic activities of the people who once occupied the area. Zooarchaeological research has been particularly well defined and utilized in Iceland for uncovering developments in livestock farming. Rich zooarchaeological datasets from 11th- through 13th-century sites all over Iceland unambiguously demonstrate a shift in herding strategies, from one focused on cattle to one focused on sheep.⁸² These data, as interpreted by the Autarkic Model, demonstrate that the environment could no longer support cattle, as farmers would never willingly invest less in cattle in exchange for a less prestigious, sheep-based subsistence economy. As if these trends were not grim enough, mortality rates indicate that it was common for lambs to be culled at very young age, with even neonatal-age lambs identified at some sites. For example, zooarchaeological assemblages from the farmstead site at Granastaðir in northeastern Iceland⁸³ discovered three articulated neonate lambs that likely date to after 1050 but before 1300 A.D. These data suggest that households, like those at Granastaðir, must have been on the brink of starvation – only in desperation would a farmer opt to kill off the vital constituents of their subsistence base. The ultimate conclusion reached from zooarchaeological research is that a “high percentage of young lambs can be seen as an indicator of stress on a portion of the herding economy” and that the presence of even a few neonates must represent some degree of “stock raising disaster.”^{84,85}

While these data can be seen as a signal of distress, other interpretations are possible; the data can also demonstrate the actions of rational economic actors who saw sheep as a valuable commodity, capable of producing a number of marketable goods, including: wool, meat, milk, horn, and fleeces. Since sheep-farming for meat and wool is still practiced in many rural areas of Iceland

82 Amorosi (1989, 1990); Amorosi and McGovern (1989); McGovern et al. (2007); Ogilvie and McGovern (2000).

83 Einarsson (1994).

84 Amorosi and McGovern (1994, 186).

85 Statistically, of course we should question whether three neonate remains, out of an NISP of 614 sheep bones, can truly constitute a disaster.

today, we can use ethnographic⁸⁶ data to construct potential archaeological correlates for identifying past herding strategies, testing whether sheep farming in the Sturlunga period was focused on general subsistence or on commercialization. Ethnographic data from Svalbarðshreppur have indicated that farmers tend not to extract all of the possible resources from the same sheep,

but instead maintain a dual flock system which separated the milking ewes (who were close herded around sel fairly close to the home farm during the summer) and infertile ewes, lambs, and castrated wethers who were driven into the highlands in the spring and left to graze in common fields until the autumn without any human supervision.⁸⁷

Infertile sheep were managed for wool production rather than dairy and meat production and in practice often depended upon the few older experienced bellwethers to survive on their own in the highlands.⁸⁸ These observations suggest two crucial material correlates for uncovering past herding strategies: culling rates documented in age and sex profiles observable in faunal assemblages, and the location where sheep are kept. Sheep flocks that are managed for their wool will have a different age/sex profile than those flocks dedicated to dairy and meat production. For wool management then we should expect to see an age/sex profile with a high percentage of older individuals, a preference for wethers (castrated rams) over ewes, and a high percentage of culled nursing-age lambs, as the “the production and processing of commercial wool correlates with a direct reduction in milk yield and meat production efficiency.”⁸⁹ Ewes overall are not preferable for wool production: first, given their smaller size, they tend to yield significantly less wool than wethers and barren female sheep;^{90,91} second, ewes need not be good at fending for themselves through grazing, but must, especially while nursing, be fed high-quality fodder so as to sustain the necessary caloric intake that milk producing demands. Because pregnancy and milking are impediments to wool growth, farmers must strategize how many new lambs are necessary each year, which frequently leads to

86 The most extensive ethnographic data come from Jón Haukur Ingimundarson's ongoing fieldwork in Svalbarðshreppur, northeastern Iceland (Ingimundarson 1989, 1992, 1995).

87 McGovern (2009, 196).

88 Aðalsteinsson (1991, 285–291).

89 Ingimundarson (1989, 24).

90 Ingimundarson (1992, 221).

91 Fertile ewes are smaller on average compared to not only rams and wethers, but also to barren females, known to reach nearly the same size as rams.

the culling and or castrating of most of a farm's spring lambs at about four to six months in age if a farm wishes to extract meat or lambskins; some lambs will be culled immediately after birth if there is a high birth rate in a single year.⁹² The most cost-effective strategy for wool farming would be to have a large number of wethers up in the highlands where they can graze in common fields with little human intervention. These fields are likely not to be intensified through manuring or field clearing practices, as wethers will eat small wild shrubs and weeds⁹³ as well as grass. Herding strategies dedicated to milking and meat production, in contrast, will be reflected in age/sex profiles dominated by a high percentage of ewes (milking) and younger males that have reached full maturity (meat). These animals are likely to be kept within the boundaries of a farmstead, being fed high-quality stored hay supplies supplemented through some opportunistic grazing.

Available faunal analysis from a number of archaeological sites supports the possibility that the economy during Phase II included a fair number of wool producers. The most comprehensive faunal analysis comes from the site Hofstaðir⁹⁴ in Mývatnsveit.⁹⁵ As in other areas of Iceland, the faunal assemblages from Hofstaðir demonstrate a clear shift towards greater sheep intensification after 1000 A.D. Data on tooth eruption and mandibular wear indicate a high culling percentage of two- to three-year-old sheep for Phase I (indicative of meat production); by in Phase II, however, there is a high culling rate for lambs less than a year old alongside a large proportion of older sheep (seven years or older), which is, as modeled from ethnographic analysis, indicative of wool production.⁹⁶ Likewise, long-bone fusion reconstructions, a proxy for overall size, indicate an average weight of 35–40 kg, and an average height of 55–70 cm for male sheep, well within the range for wethers rather than rams, which once again suggests an economy of wool production over meat production.⁹⁷ The reconstructions of age, sex, and size profiles of sheep from Hofstaðir “suggest a ‘dual flock’ herding strategy, with some ewes being managed for

92 Ingimundarson (1989, 26), (1992, 221).

93 Wethers have a ravenous reputation and will even eat small birch trees and seaweed given the opportunity.

94 109,373 bone fragments have been analyzed from Hofstaðir since 1991, easily making it the most thoroughly examined faunal collection in Iceland (Friðriksson et al. 2004; McGovern 2009).

95 McGovern (2009).

96 Ibid., 197–200.

97 Ibid., 200–202.

milk, but with a substantial portion of the flocks being managed for wool, and probably moved to highland grazing during the summer months.”⁹⁸

Zooarchaeological data reflect a growing class of ‘merchant-farmers’ who aimed to produce wool well above the subsistence needs of any single household. These data alone, however, cannot shed insights on the intensity of commercialized wool production and the extent of power these economic enterprises held in the formation of incipient secondary state institutions. Landscape organization, as reflected in regional settlement pattern trends, can provide the data necessary to address this crucial component in the economic evolution of medieval Iceland and the development of state-level administration. I will examine two crucial landscape developments of the Sturlunga period: the construction of churches and the escalation in the establishment rate of small farmsteads as documented in the MSR for Skagafjörður.

6.5.3 *Church Organization as a Tool for Restructuring the Economy*

In 1000 A.D., one of the first major institutional changes on the path towards state-level administration was set in motion with the national conversion to Christianity. Should we view this conversion as a version of Weberian ‘Protestant ethic,’⁹⁹ where ideology shapes self-interest, or as a Marxian case of economic forces shaping ideology?¹⁰⁰ The relationship between an ideological shift and a concentration of power, first in the hands of secular chiefs and later of the church, is fertile ground for understanding the relationship between individual self-interest and institutional change. I examine here the Marxian position that the adoption of a new religion and subsequent development of a new aristocratic class was shaped largely by the dynamics of a changing political economy and the development of trading enterprises focused on rural production that had already begun to take shape before this ideological shift.¹⁰¹ A new religion, tied to the wealth and authority of foreign kingdoms, and therefore connected to a network of potential international consumers of Icelandic produce, served as a new source and expression of power for local, often rivaling, elite chieftains and families.¹⁰²

98 McGovern (2009, 202).

99 Weber (1930).

100 Marx (1981).

101 This is not to say that all converts, elite or commoner, lacked any sort of sacred motivation for becoming Christian – to be sure, some individuals converted for very personal, spiritual reasons – but the conversion of an entire group *en masse* was likely grounded in more profane motivations.

102 Aðalsteinson (1999); Strömback (1975).

By the 12th century, a widespread system of rural churches across the landscape (Figure 58) provided the necessary structural framework for the maturity of secondary state institutions.¹⁰³ Archaeologically, small churches appear around 1000 A.D., all located within the property of domestic farmsteads, and are often associated with a shift away from pagan burial treatment toward the use of cemeteries.¹⁰⁴ These churches are most often tied to pre-existing large (type 1) farmsteads and reflect an elite use, perhaps overseen by chieftains who may have taken on both a secular and spiritual authority (*kirkjugoðar* or 'church chiefs'). Establishing churches on their property gave chieftains an opportunity to strengthen their own social position, transferring the power and authority of the Catholic Church unto themselves. A church, however small, was a symbol of ties to not only a spiritual authority, but also to corporeal political and economic allies abroad. In a chiefly society where alliances can make or break a chieftain's career, this was no small feat. Farms with churches could easily become centers of political and economic exchange in Iceland, as they did in other parts of Europe; however, it would be difficult to see these early manifestations as institutional. There is no clear evidence, for example, of any sort of consistent structure or organization to the construction and use¹⁰⁵ of churches throughout the 11th century. By 1100 A.D., however, church leaders in Iceland had begun the task of establishing a firm institutional administration, similar to those seen throughout northern Europe. These developments include: two episcopal sees (bishoprics), one in the south (Skálholt in 1056 by the archdiocese of Hamburg-Bremen, Germany) and one in the north (Hólar in 1106 by the archdiocese of Lund, Sweden); the tithe (*tíund*) tax (1096/7); and the formal inclusion of Christian laws into the *Grágás* (1122–1133). These developments reflect the emergence of state-level administrative institutions with a formalized religion governed by the authority of two elected bishops, formal taxation, and a formalized legal code, all maintained and operated through the auspices of the church. Drawing on parallels from the analysis of medieval European kingdoms,¹⁰⁶ these institutional changes likewise signal potential economic changes. In the absence of urbanism, the

103 Sigurðsson (2006, 2007).

104 Vésteinsson (2005b, 74).

105 The use of early churches is poorly understood, given the paucity of available textual and archaeological information. Our notions on the significance of early churches are likely to change as additional archaeological data bring to light the range of activities that took place in these locations.

106 Moore (2000).

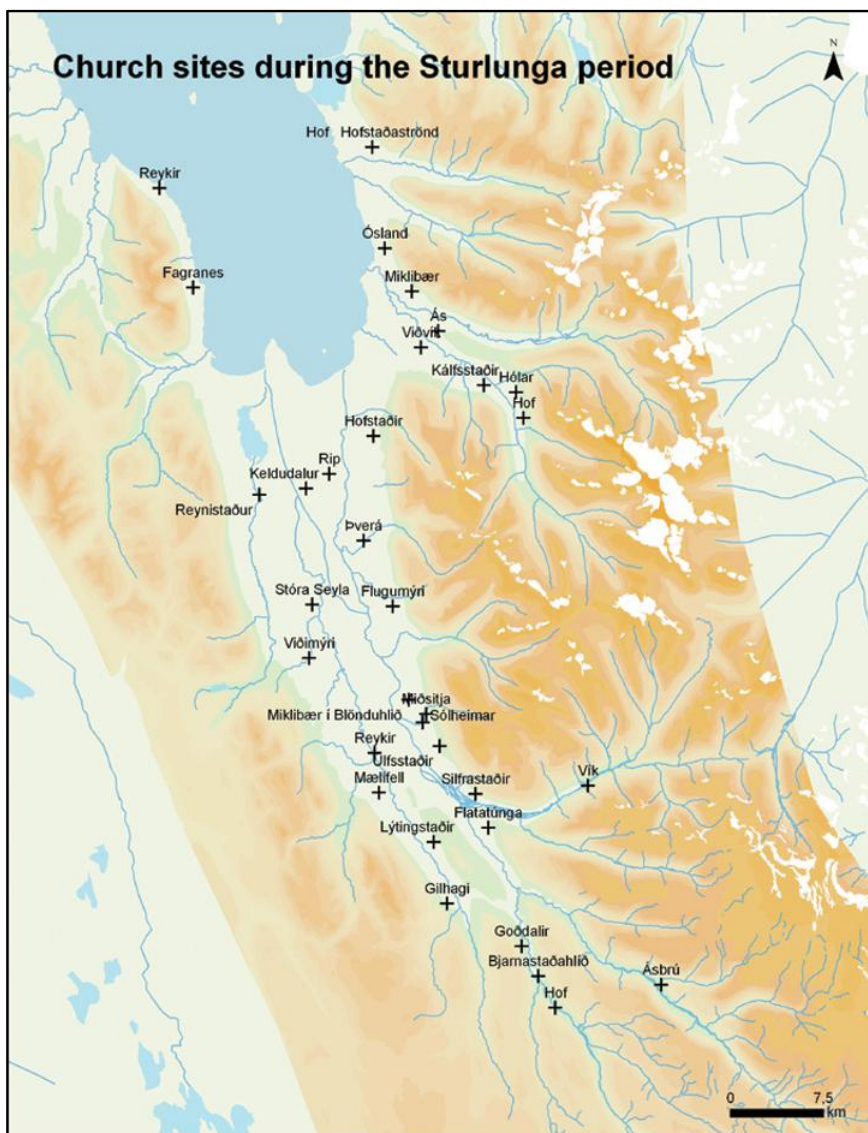


FIGURE 58 Church sites during the Sturlunga period (1104–1300 A.D.)

episcopal sees at Skálholt¹⁰⁷ and Hólar would have been likely substitutes for cities, facilitating as not just ideological centers, but also as places where craft

¹⁰⁷ *Hungrvaka* (The Appetizer or 'hunger walker'), an account of the lives of the first five bishops of Skálholt (written in the first half of the 13th century), recounts chronicler Adam of Bremen's (d. 1081) impression of Skálholt as the "largest city" in Iceland, complete with a cathedral, extensive farming, craft specialists, merchants, and a school.

production, mercantilism, and other forms of social exchange could be conducted. The standardized¹⁰⁸ collection of the tithe, likewise would have provided revenue that could be invested in various enterprises, not least of which a trade economy of the type seen throughout northern Europe.

In addition to these administrative changes, new forms of elite centers were established that could have introduced the market demands associated with an intensified economy. Church annals from Iceland describe a new type of farmstead in the 12th century, the *staðr* (plural *staðir*) or benefice farm, “where the property and farm operations were in full service of the church and financed its operations in full.”¹⁰⁹ Because *staðir* were self-governing units under church authority, they were exempt from paying the tithe, a motivation that has often been cited as the reason why landlords might relinquish their property to the church.¹¹⁰ This view has been challenged by recent scholarship suggesting that by converting their property into a *staðr*, a landowner had far more to gain than simply the avoidance of paying the tithe.¹¹¹ The motivation for creating a *staðr* reflects real-world political and economic interests, especially for the elite sectors of the society as the vast majority of *staðir* were created on wealthy, type 1 farmsteads. Converting a farmstead into a *staðr* may have given some elites an advantage on the competition by attracting visitors to their land, acting as central places of communication and exchange.¹¹² As locations connected to the church, these farmsteads may have also been seen as safe havens and sacred places where violence was not permitted.¹¹³ Regardless to why *staðir* attracted visitors, once these individuals were drawn in they could become potential allies and perhaps even potential market customers. The location of *staðir* sites lends further support for this hypothesis: all *staðir* are situated along crucial travel routes, at crossroads, or near harbors.¹¹⁴ The combination of geographic position and sacred social status would have made *staðir* sites leading agents of economic and political authority.

108 By 1200 A.D., all farmsteads were assigned to a specific ‘tithe area’ that designated the church to which they should be paying taxes. Some historians have suggested that tithing areas were in operation as early as 1100 A.D. (for a discussion on this, see Vésteinsson 2000b: 69–92).

109 Eyþórsson (2005, 38).

110 Stefánsson (2000, 76).

111 Þorláksson (2005, 128).

112 Vésteinsson (2006).

113 In practice, this is somewhat debatable, as there is no shortage of violent episodes in or near churches described in the sagas; however, the presence of a church may have been enough to curb some acts of violence, making these sites, at least in theory, safer relative to other locations in the landscape.

114 Þorláksson (2005, 130–138).

From a network analysis point of view, staðir sites are likewise significant because they represent potential first-tier nodal sites for Phase II. If Phase II represents a period of social change and transition, then one would expect the relationship between these new nodal sites, second-tier hub sites, and smaller third-tier nodes to be expressed in the settlement patterns for Phase II differently from how they had been expressed for Phase I. From this discussion on the development of church administration and the formation of possible new centers of power, we are left with the vital question of why these developments did not occur earlier than the 12th and 13th centuries. Under the parameters of a Viking Age economy these structural changes on their own would have offered little benefit to elites attempting to manipulate political power within the society; once the society shifted its focus to an agrarian, land-based medieval economy in the 12th century these institutional developments would have been both favorable and necessary for economic intensification. These economic shifts are reflected not only in the administrative developments of the church, but also in the restructuring of the landscape, creating a propertied system capable of supporting greater rural production.

6.5.4 *Settlement Patterns: Staðir, Small Farms, and a New Economy in Skagafjörður*

Overall, the settlement pattern data from Phase II suggests a mosaic of chiefly and embryonic state characteristics, making Phase II a period of transition that by the 14th century would culminate in a fully-fledged feudal landscape. Settlement trends documented in the MSR for Skagafjörður suggest that Phase II begins with the escalation of economic developments that had already surfaced by the end of Phase I – namely, the intensification of smaller farmsteads presumably devoted to livestock-rearing (see Figure 59 and Table 37). Under the Autarkic Model, one might have predicted this development to have occurred soon after the initial settlement phase, as population growth and subsequent land shortages following the end of enthusiastic settling of the frontier would have *forced* a new generation of farmers to claim less desirable but unused lands. The settlement pattern data does not support a land shortage scenario: right from the beginning, the supposedly marginal lands – the midlands and lowlands – were used, while the highlands remained systematically unoccupied until *after* the first generation of settlers; highland sites were not established until the Early Medieval period (between 1000 and 1100 A.D.). Likewise, Phase I settlement patterns indicate large, type 1 farms occupying large tracts of land; population growth could be accommodated through the

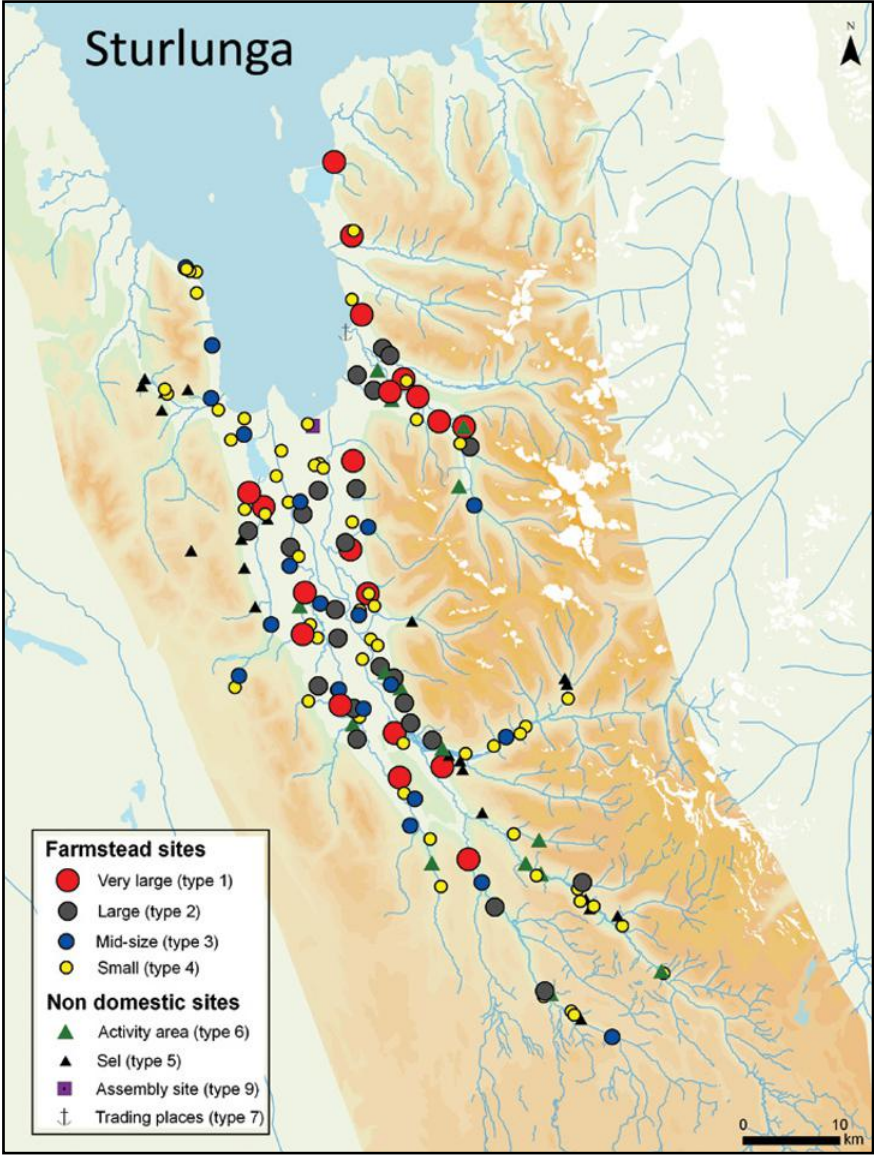


FIGURE 59 Sites ($n = 140$) in the Sturlunga period (1104–1300 A.D.)

TABLE 36 *Phase II farmstead sites (n = 115)*

Region	Type 1	Type 2	Type 3	Type 4	TOTAL
Coast	2	2	1	0	5
Lowland	8	13	12	7	40
Midland	11	10	6	4	31
Highland	2	4	7	26	39
TOTAL	23	29	26	37	115

subdivision of the landscape into smaller properties within initial land claims, but this development does not occur in earnest¹¹⁵ until after 1300.

On the other hand, the Imperial Economy Model would predict that Phase II would be a period characterized by the consolidation of economic and political control, especially once Iceland adopts Christianity, a foreign ideology with state-level implications. The settlement pattern data presented here for Skagafjörður do not refute a trend towards greater economic intensification; on the contrary, they support it, but there is little evidence to support the hypothesis that Norway was orchestrating these developments. As discussed above, state-level institutions do not appear at the very moment Iceland converts to Christianity. Textual accounts, however, do suggest that Norwegian kings held a newfound interest in Iceland by mid-11th century, with several kings offering to become the sole sovereign over the island. While the texts imply that Icelandic elites valued their social connection to kings living abroad, they held no desire to have one rule over them. In *Heimskringla*, for example, King Ólafr (c.1025 A.D.) asks if he might be granted the very small and insignificant gift of Grímsey¹¹⁶ Island, which he describes as nothing but a “useless rock” where his men might from time to time be able to dock their boats and set up camps for a few weeks during the summer. Chieftain Guðmundr, an ally of the king, is willing to grant the king this small favor, but he first calls a meeting with the community to ask permission. Guðmundr’s brother, Einar, strongly questions the wisdom of granting Ólafr’s request, arguing that it might lead to the permanent slavery of Icelanders:

115 It is only after 1300, for example, that smaller farmsteads (site types 3 and 4) characterize landscape organization in the lowlands and the midlands. Throughout Phase II, large farmsteads continue to dominate both the lowland and midland regions.

116 Grímsey is located northeast of Skagafjörður; the Arctic Circle runs through the island.

If the people of this country will preserve the freedom they have enjoyed since the land was first inhabited, it is not advisable to give the king the smallest spot to fasten himself upon the country by, and not to give him any kind of scat or service that can have the appearance of a duty. On the other hand, I think it very proper that the people send the king such friendly presents of hawks or horses, tents or sails, or such things, which are suitable gifts; and these are well applied if they are repaid with friendship. But as to Grimsey Isle, I have to say, that although nothing is drawn from it that can serve for food, yet it could support a great war-force cruising from thence in long-ships; and then, I doubt not, there would be distress enough at every poor peasant's door.¹¹⁷

By the end of Phase II, there is no question that Norway politically controlled Iceland, so we might suspect that the settlement patterns seen after 1300 should be nearly identical to those seen in Phase II if Norway was already controlling Iceland; however, they are decisively different. In Skagafjörður, the Phase II site distribution is typified by a high number of type 1 and 2 farmsteads (45% of the total site assemblage¹¹⁸) located within fairly close proximity to one another, which suggests a healthy elite faction within Iceland capable of carrying out the tasks of overseeing the economy. In contrast, type 1 sites represent just 9% of the total assemblage in Phase III, and type 2 sites represent just 16%, indicating depreciation in the ratio of elite to smallholder sites by nearly 50%. The social structure of Phase II, then, is separate and distinct from Phase III, when Iceland is unquestionably under the rule of a foreign king and power vested in fewer hands.

A good indication of the social organization in Skagafjörður during Phase II can be seen through the location of active centers of communication and exchange at crucial nodal and hub points in the landscape. Nodal points and hubs were already established by Phase I, but there is a potential shift in which of these first- and second-tier sites saw the most traffic. This is difficult to address with the present data, but it is clear that two prominent staðir sites, and therefore possible nodal points, are formed during Phase II: Hólar and Goðdalir. During Phase I, Hólar was likely part of the larger Hof land claim, but archaeological and textual sources indicate that Hólar was its own farmstead¹¹⁹ by 1050.

¹¹⁷ *Heimskringla* (1979), chapter 134.

¹¹⁸ Phase I was likewise high, representing 46% of the total site assemblage.

¹¹⁹ Hof, on the other hand, had been abandoned but would later be reoccupied. The reason for abandonment is unclear, but while conducting the coring survey I discovered geomorphological evidence of a possible landslide occurring before 1104 A.D. (see also Chapter 5).

Hungrvaka and *Jon's saga* report that that the farmer at Hólar, Oxa Hjaltasaon, built a church there and that later, his grandson Illugi Bjarnason, at the request of his own son Hilariús who was a priest, donated his land to the church so that a bishopric could be established in the north, complementing Skálholt, the bishopric in the south. By 1106, the bishopric at Hólar was established. The selection of Hólar as the site for one of only two bishoprics in Iceland no doubt reflects the prominent social position of the family¹²⁰ who owned the land, but it also reflects the importance of geography and travel. As discussed in chapter 5, the geographic position of Hólar makes it a strong candidate for a possible nodal point. Hólar is positioned at the end of the Hjaltadalur Valley, immediately at the entrance to the narrowing passage over the mountains to Eyjafjörður where the next trading center, Gasir, can be found. This prime location made Hólar the social bridge connecting the ports of Kolkuós and Gasir. Archaeological evidence confirms that, similarly to Adam of Bremen's observation of the 'city' of Skálholt, the size and complexity of Hólar was unmatched by any other site in Skagafjörður and served as a center for craft production, exchange, and the consumption of luxury goods.¹²¹ Goðdalir, while smaller in size than Hólar, was likewise positioned at a key location in the landscape, situated along the route that took travelers up into the highlands. Later sources¹²² indicate that Goðdalir maintained a bridge over the Laxá River, which would have regulated access in and out of the area.¹²³ As I will discuss below, the heightened activity at Goðdalir reflects the economic developments of Phase II, with a greater emphasis placed on a rural economy, which would have made the highlands a valuable asset.

In addition to these staðir sites (nodal points) is the continuation of type 1 sites (hubs) established in Phase I, but now characterized by the addition of small parish churches¹²⁴ associated with them. Of the 23 known type 1

In the 20th century, several people were trapped and killed by a landslide at Hof, suggesting that these geological events were unfortunately common.

120 Oxa was a direct descendant of Hjalti, the first settler in Hjaltadalur, who built his farm at Hof.

121 Traustadóttir (2005).

122 Found in the *Diplomatarium Islandicum*, a collection of documents that predate 1570 A.D. (1853: 431).

123 Þorláksson (2005, 131).

124 These are not staðir sites, but privately owned churches (*bændakirkja*) that were likely consecrated by the Catholic Church. In exchange, the landowner had to pay the costs of keeping up the church and the salary of a priest to serve the congregation. In some cases a portion of the produce of the land was designated as revenue for the Church (Eyþórsson 2005: 37; Þorláksson 2005: 129).

farmsteads in Skagaþjörður, only three will never establish a church on their property: Héradalur in Tungusveit, Frostastaðir in Blönduhlíð, and Höfði in Höfðaströnd; however, both Frostastaðir and Höfði will become the properties of Hólar by the beginning of the 14th century. These data suggest that economic production and exchange could be carried out at church centers, making cities unnecessary for commercial enterprises. It is far from coincidental that the owners of large farmsteads, which likely already held substantial influence during Phase I, opted to construct churches on their property. This action can be seen as a necessary endeavor in the quest to stay ahead of the competition; if one wanted to partake in the political economy, one needed an ideological backing.¹²⁵ Managing the economy through the infrastructure of the church may have also served as a guarantee on the quality and price of goods, operating much in the same way the markets do today. Churches are clearly becoming central places but this is not merely a shuffling of power, but a structural change, moving social relationships away from the personal power of an individual (a chieftain or an elite) toward the power of an institution (church). This transition paved the way for the marginalization of small householders that would reach its full maturity with the creation of the feudal state seen in Phase III.

The divide between landowners and smallholders is likewise seen in the distribution and frequency of farmstead size in Skagaþjörður during Phase II. While the overall number¹²⁶ of farmsteads increased during Phase II, the growth of type 4 farmsteads (smallest household site category) was the most dramatic, increasing from merely eight sites in the Settlement period, to 19 in the Late Medieval, and to an astonishing 37 sites in the Sturlunga period. By contrast, type 1, 2, and 3 farmsteads demonstrate a more conservative growth rate, but an increase nonetheless. There were 13 type 1 farmsteads in the Settlement period, 17 in the Early Medieval period, and 23 in the Sturlunga period. Showing a similar growth rate were type 2 farmsteads, with 13 in the Settlement period, 17 in the Early Medieval period, and 29 in the Sturlunga period. Type 3 farmsteads (medium-sized household site) paralleled the growth of type 1 and 2 farmsteads, with 12 sites in the Settlement period, 18 in the Early Medieval period, and 26 in the Sturlunga period. Only ten additional type 1 farmsteads (mostly in the midlands) were established after the Settlement period, 16 type 2 (almost all in the lowlands and midlands), and 14 type 3 (mostly in the lowlands and the midlands), but there are 29 additional type 4 farmsteads established, with 20 of these sites located in the highlands.

¹²⁵ Zoëga and Traustadóttir (2007); G. Zoëga (2009b).

¹²⁶ By Phase II, 115 farmsteads are in place.

Overall, type 4 farmsteads are the majority of sites found in the highlands (67%). In contrast, type 2 and 3 farmsteads become the most common site in the lowlands (63%), while in the midlands type 1 and 2 farmsteads dominate (68%). These differences in farmstead size¹²⁷ represent clear distinctions in landscape use, as well as a clear division in social hierarchy. The source of these differences, I argue, is the product of both economic and environmental changes clearly occurring throughout Phase II. I illustrated in chapter 2 that significant changes in soil morphology were underway by the 12th century, with the lowland and the midland areas experiencing a dramatic increase in silty soil accumulation. This increase in soil accumulation transformed the soil morphology from Histosol–Histosol Andic (H-HA) soil or bog soil to Brown and Gleyic Andosols (BA-WA) complexes. This made the lowland and midland areas highly productive and set into place what would become a permanent physical and social divide between the wealthy landlords with large farmsteads in the lowlands and the midlands and the poorer, smaller tenant householders in the highlands. Likewise, the highlands, even during the initial settlement phase, were areas with good rangelands for smaller livestock, such as sheep and goats, rather than areas for intensified hay production. As the economy moved towards greater wool production, controlling access to rangelands in the highlands became crucial and explains why small farmsteads in the highlands become more prevalent in late 11th–early 12th century and not sooner.¹²⁸

Reviewing the zooarchaeological evidence together with the settlement pattern data within a model reflexive of these ethnographic data suggest that Phase II sites, with a high percentage of sheep in their overall faunal assemblages, were flocking their herds for wool management more than for milk and meat production. Settlement pattern data from Skagafjörður are, likewise, suggestive of a shift towards greater reliance on sheep-rearing. We know from 18th-century diaries and travelers' reports that sheep-farming was the dominant enterprise in Iceland's rural economy. This type of farming was carried out not only within the homestead, but also at remote, satellite *sel* (shieling) sites throughout the highlands. Interestingly, Phases I and II document very

127 Coasts: type 1 and 2 farmsteads make up 80%; type 3 and 4 farmsteads make up 20%.

Lowlands: type 1 and 2 farmsteads make up 53%; type 3 and 4 farmsteads make up 48%.

Midlands: type 1 and 2 farmsteads make up 68%; type 3 and 4 farmsteads make up 32%.

Highlands: type 1 and 2 farmsteads make up 15%; type 3 and 4 farmsteads make up 85%.

128 This pattern dovetails well with what Krugman (1995) termed an "economic geography" and is an important explanation for why lowland farmers become wealthy landlords and highland farmers become marginalized tenants.

few sel (site type 5) sites: a total of merely eight¹²⁹ known locations for all of Skagafjörður. This low number may reflect an archaeological bias, as sel sites are notoriously difficult to identify, but it may also reflect a herding strategy that emphasized wool production rather than milk production. Sel sites served as temporary housing for herders who had taken their flocks up to the highlands to graze in the summer and also as places where milking and the making of dairy products was carried out. If the goal of a farmer was to extract wool rather than milk, then it is likely that sel sites were simply not needed. Likewise, the shift towards small farms, especially in the highlands, is a good indication of a rural economy centered on the interests of wool production. From an environmental perspective, the constraints of a highland landscape made the management of meadows at best a challenge in some areas and at worst impossible in the harsher interior reaches of the island. As part of a sheep-rearing strategy, however, these challenges were not a detriment to wool production, as wethers can graze independently of human intervention even in less-than-ideal rangelands. The larger question remains of why establish farmsteads in the highlands at all if the economic goal is to manage sheep for wool? Why not simply keep a farmstead in lower elevations and seasonally drive the sheep into the highlands? I would suggest that one possibility for the placement of these farmsteads were territorial claims over highland grazing areas, and may reflect a full-time specialization of wool producers. The establishment of farmsteads in less-than-ideal agricultural lands could have acted as physical marker of rights to land use. These farmers may not have been in the highlands to oversee their sheep, but to oversee the grazing land. It is probable that these small farms were attached to larger farms located in the nearby lowlands and midlands, but more evidence is needed to support these hypotheses.

6.5.5 *Path Towards State-Level Organization in Skagafjörður*

The picture that comes into focus from the data presented here is highly complex, with multiple variables operating in tandem. Applying a network-based approach, however, allows us to examine the relationship between these variables, providing us with a fuller account of how both external and internal variables converged in the development of a secondary state in Iceland. The development of state-level institutions is well illustrated in Iceland, unmistakably visible through changes in landscape use during Phase II; however, one should be cautious in viewing these changes as the *consequence* of a new

129 By comparison, there are 39 known sel sites by 1700. The number dropped to 22 sites in the 19th century, a period when, interestingly enough, intensive wool production was revived.

religion or a new economy. Instead, I argue that the transformation of landscape use co-evolved with ideological and economic modifications that paralleled localized changes in the environment and sources of power and authority for political leaders that had been set in motion by the end of Phase I. It is the coalescence of all of these factors that conspired within one linked social network to create secondary state institutions in Iceland. I have illustrated how an economic shift towards greater wool production, documented in zooarchaeological and settlement pattern data, was carried out through the reorganization¹³⁰ of the landscape. Overall, the landscape organization of Phase II represents the ideology of an incipient state, with features of a chiefdom existing alongside elements of a state. These data for Skagafjörður, and their implications for a larger Norse Economic Territory (NET), provide us with an innovative, acute insight into the process of secondary state formation as a complex interplay of local and external variables (see chapter 7).

6.6 Phases III and IV: A Secondary State Operating under an Ecclesiastical Economy

In 1262, Iceland was annexed into the Norwegian state on the condition¹³¹ that six Norwegian merchant ships per year were to come to Iceland, resuming the active trading relationship between the two polities. This stipulation clearly demonstrates the importance of trade for Icelanders, and their willingness to lose some of their political autonomy in exchange for economic insurance (see chapter 7 for further discussion). While Iceland came under the political control of Norway, there was never a king in residence in Iceland; in fact, Norwegian and later Danish kings rarely if ever traveled to their island principality. Instead, Iceland was ruled through a governor elected by the king and through a system of regional sheriffs (*sýslumenn*) who were typically Icelanders.¹³² Although positions of authority originated from the king, his power was indirect and nearly unenforceable. Direct power in Iceland was restricted since there was no effective secular centralized bureaucracy until the late 17th century. Local power, therefore, remained in the hands of bishops who operated with the

130 This reorganization paralleled the developments seen in Scandinavia, with a rural economy operating through the structure of a church-based administration that could regulate the tempo of production and exchange (see chapter 7).

131 This condition is stipulated in the *Gamli Sáttmáli* ('Old Covenant'), a legal document that acknowledged Iceland's loyalty and service to the Norwegian Crown.

132 Hasturp (1991).

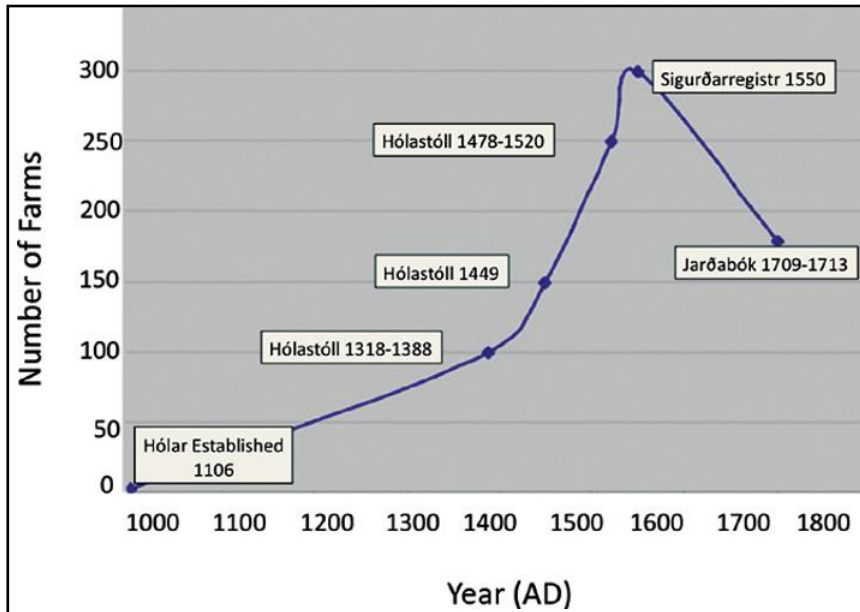


FIGURE 60 Farms owned by the Hólar Bishopric as recorded in church and census records

power of a king through an ecclesiastical bureaucracy, maintaining greater autonomy than they had previously held when authority was derived from the support of local farmers and chieftains.¹³³ By 1450, the Catholic Church was the largest landholder in Iceland,¹³⁴ echoing similar developments in the feudal system found throughout western Europe (Figure 60); 400 years earlier, however, the Church's position in Iceland could accurately be described as a mere extension of the power of the strengthening legion of chieftains. How then, does a chiefly political structure lose ground to its own creation? At the root of this question is the larger issue of how embryonic state institutions are able to oust chiefly sources of power, taking over both the political and economic stage. In Iceland, the stage was cloaked in the religiosity of the Catholic Church; a play perhaps more entrenched in property than in piety, but one of social power nonetheless. The competition between Iceland's secular and sacred elites reached its zenith in the 13th century, as the aristocracy fought for the right to retain control of lands that had formerly been bequeathed to the Church in an attempt to broaden their economic and political base by creating centers of attraction and transaction. Textual accounts depict a close working

¹³³ Sigurðsson (1995).

¹³⁴ Magnusson (2005, 207–221).

relationship between chieftains and bishops; in fact, most bishops were from prominent elite families in Iceland (Sigurðsson 2007, 2008). It is likely that chieftains in the beginning firmly believed they were in control of priests and bishops; however, the relationship between chieftains and clergymen in Iceland was punctuated by conflict, and ultimately an attrition of chiefly power.¹³⁵

One of the most revealing examples of this terse relationship can be found in the *Bishop's saga*, which recounts the miscalculations of two brothers, Kolbeinn (d. 1208) and Arnór (d. 1227), members of the powerful Ásbirningar family, who attempted to gain control over their rivals in Skagafjörður by lobbying to have Guðmundr góða ('the Good') installed as the bishop at Hólar. Guðmundr started his career as a priest in Kolbeinn's household, so when the seat of the bishopric opened up, Kolbeinn campaigned for Guðmundr's appointment to the post. Kolbeinn undoubtedly believed setting Guðmundr up as the bishop was his chance to thwart the power of the chieftains in Skagafjörður, assuming that Guðmundr would remain under the sway of the Ásbirningar family, but that did not happen. Instead, Guðmundr wrapped himself up in the power of Hólar and refused to grant any of Kolbeinn or Arnór's demands for favoritism. Their conflict eventually became violent, as Arnór and a group of followers attempted to force Guðmundr out of office. In the midst of this armed conflict, Guðmundr was forced to flee from home at Hólar, and take refuge in the south, while Arnór took over the lands at Hólar. The following spring reconciliation was attempted between the two men, but Arnór refused to let Guðmundr return to Hólar "where he might control more than his clerics and the church services."¹³⁶ Upon hearing this, the archbishop in Rome wrote a letter to Arnór, commanding him to let Guðmundr come back to Hólar, and to give back all the property Arnór had taken from him. The letter goes on to state that despite the crimes Arnór may believe Guðmundr has committed, he has no right to judge the bishop, for only "God and the Pope hold that right."¹³⁷ "After his letter, Arnór and his men were quiet."¹³⁸ These passages suggest that the bishop stood outside of the chiefly social arrangements that centered on a system of checks and balances. A chief had limits, for if a chief

135 These same types of conflicts are documented throughout Europe (the sagas read with eerie similarity to the conflicts between Henry II and Thomas Beckett for example). These conflicts are not restricted to Christianity but seem to be a common problem resulting from the political and economic use of institutionalized religions.

136 *Biskupa sögur* (2003), chapter 25.

137 *Ibid.*, chapter 26.

138 *Ibid.*, chapter 27.

fell out of favor with the community he could be removed from office or even killed. The bishop, however, could be judged only by “God and the Pope,” rendering him essentially untouchable and leaving his power unchecked. This power extended to economic interests as well: in addition to generating a sizable income from the tithe and from benefices, the Church often emerged as the victor in any disputes over land or access to natural resources. For example, the *Bishop's saga* describes a dispute between a chieftain and the farmer at the staðr at Reykholt. The chieftain would like to graze his horses in a nearby open field, but the farmer rejects his request with the justification that the grass belongs to St. Peter. This was considered a sufficiently valid reason, and chief moved on. It is easy to see the potential economic clout the Church could therefore acquire. In fact, the number of new staðir churches rapidly declined by the end of the 13th century,¹³⁹ as elites likely no longer saw ideology as the pathway to acquiring their own power; that power was now reserved for the clergy only. The power of the Church was officially legitimated by the Norwegian Crown in 1297 A.D. when the king intervened to decree that control over the lands where a staðr was located was held by the Church alone, and not lay individuals (‘the *staðarmál* ruling’).

By 1550, the bishopric at Hólar alone owned more than 300 farms – 75% of all the land in northern Iceland (Figure 60); and by the end of the 17th century 95% of all farms in Iceland were occupied by tenants, replacing the previous system of independent smallholders.¹⁴⁰ In Skagafjörður, the number of farmsteads increased from 115 sites in Phase II, to an astounding 353 sites in Phase III (see Figure 61 and Table 38), declining slightly in Phase IV to 320 sites (see Figures 62 and 63 and Table 39). While type 4 farmsteads were consistently underrepresented in Phase I, small farms become the norm after 1300 A.D., with type 3 and 4 farmsteads comprising 75% of the total sites in Phase III and 73% in Phase IV. The crucial difference between Phase II small farmsteads and those of Phases III and IV is that while small farmsteads clustered in the highlands in Phase II, they are located in every region, aside from the coasts, by Phase III. During Phase IV, the lowlands even surpass the highlands in the number of type 4 farms. This shift in landscape use signals a systems change in Iceland, from one organized by a scale-free network with indirect economic control to one with direct economic control. The shift in the architecture of the system is reflected in the shift in the social structure of Iceland, from one of

139 Þorláksson (2005).

140 Lárusson (1967).

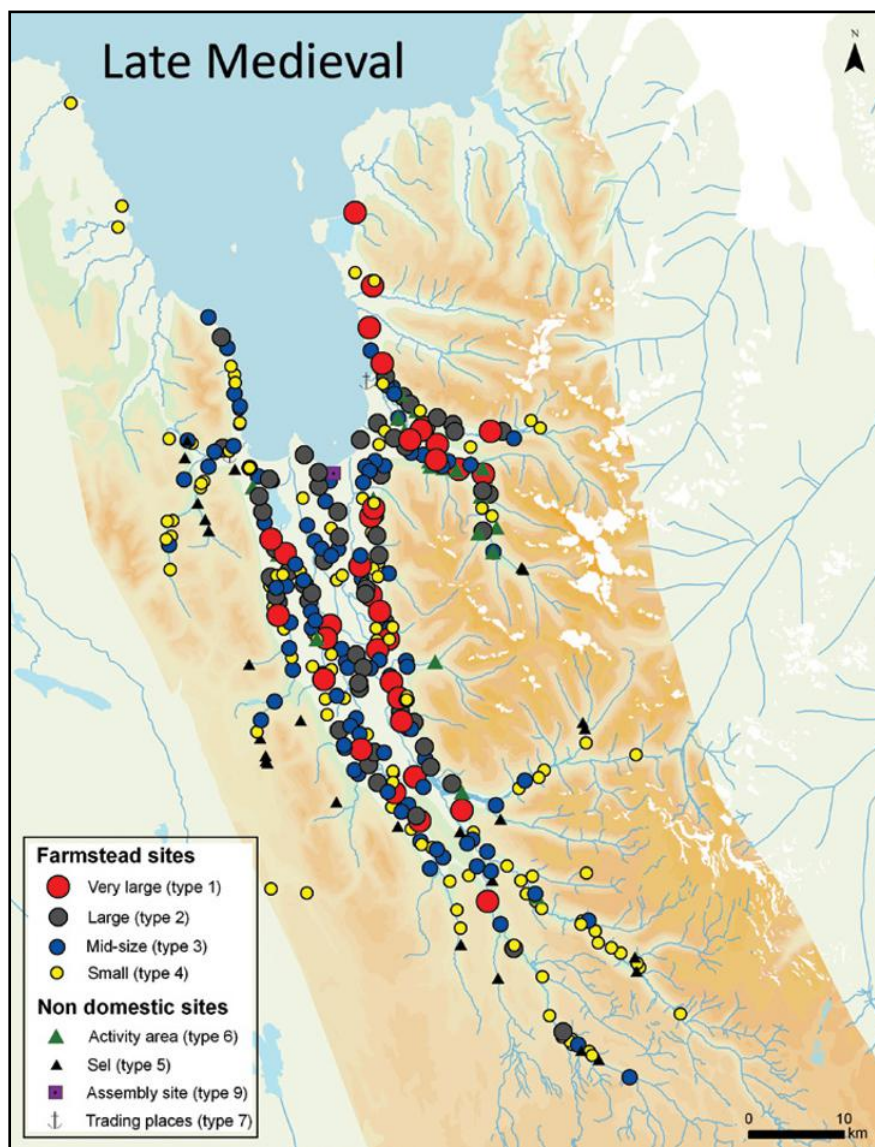


FIGURE 61 Sites ($n = 415$) in the Late Medieval period (1300–1600 A.D.)

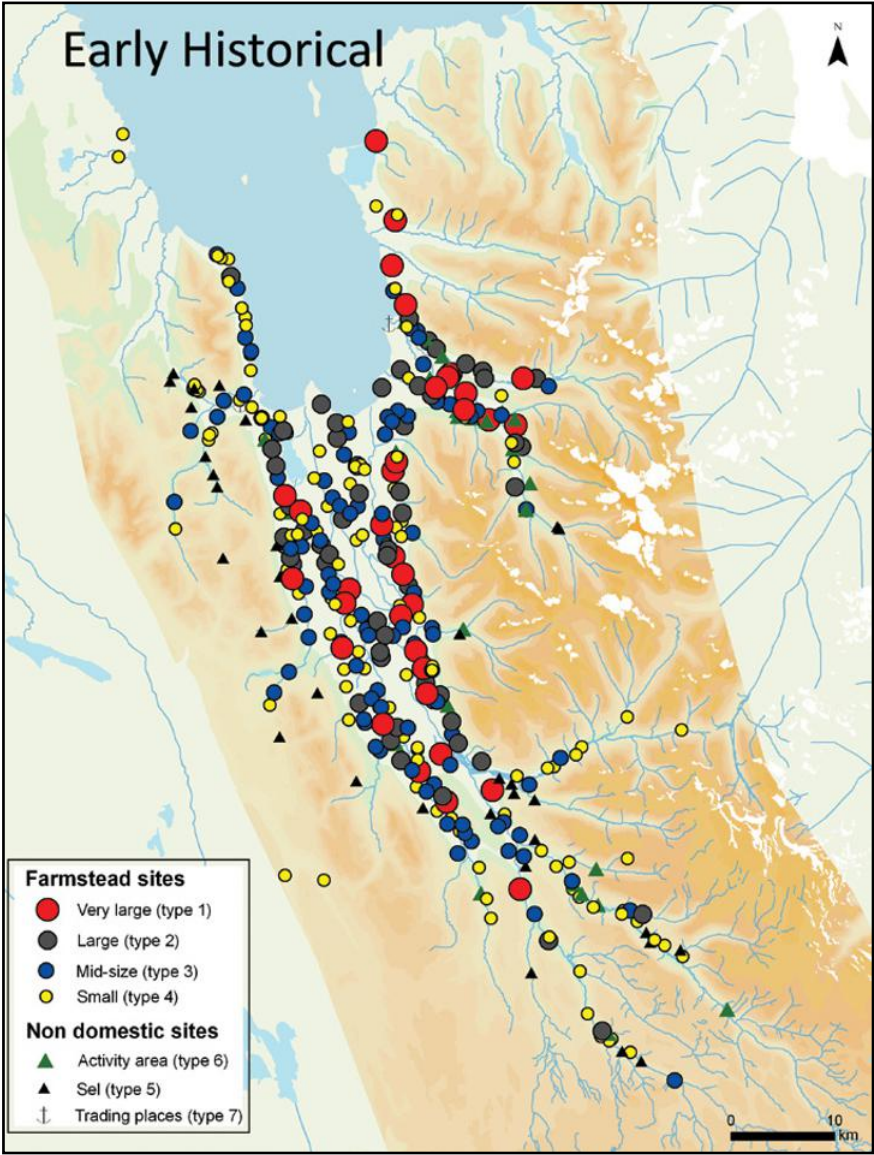


FIGURE 62 Sites ($n = 539$) in the Early Historic period (1600–1800 A.D.)

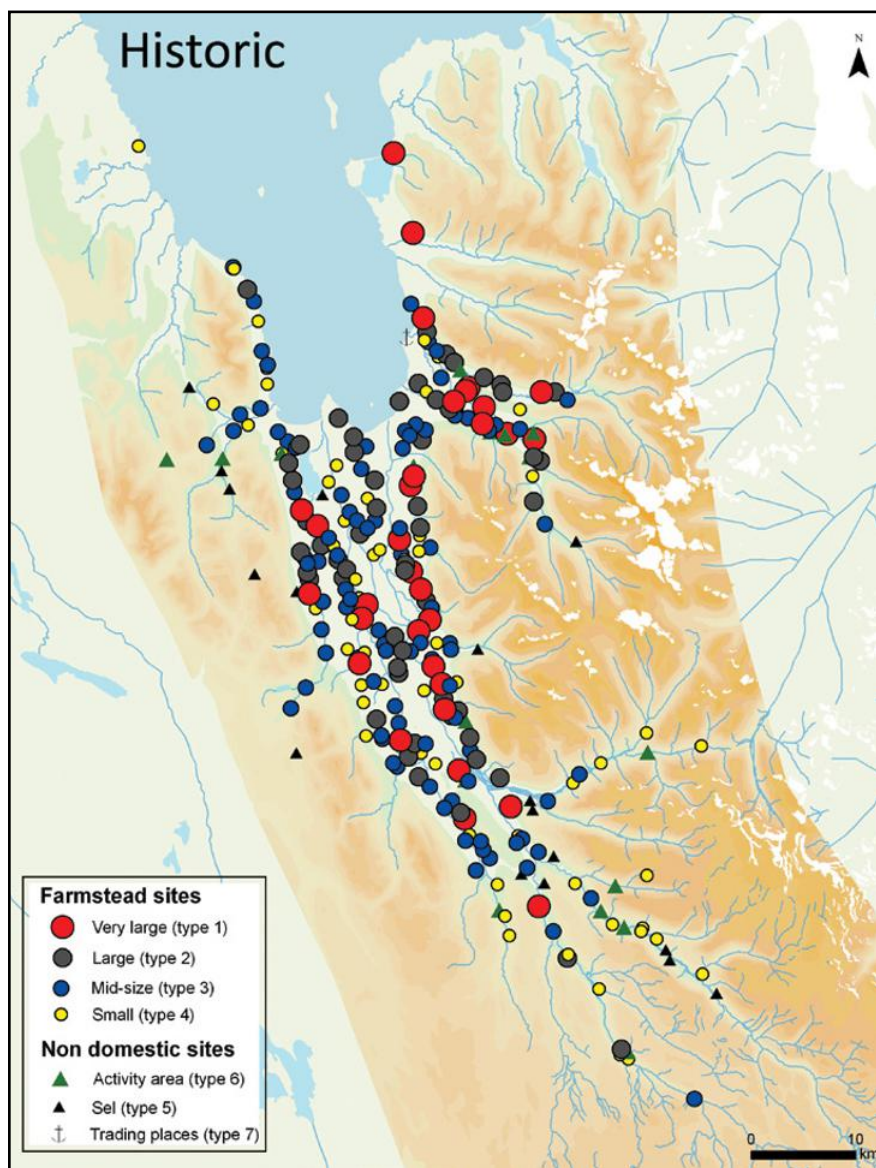


FIGURE 63 Sites ($n = 428$) in the Historic period (1800–1900 A.D.)

TABLE 37 *Phase III farmstead sites (n = 353)*

Region	Type 1	Type 2	Type 3	Type 4	TOTAL
Coast	2	3	3	9	17
Lowland	12	27	46	41	126
Midland	16	20	40	48	124
Highland	3	6	20	57	86
TOTAL	33	56	109	155	353

TABLE 38 *Phase IV farmstead sites (n = 320)*

Region	Type 1	Type 2	Type 3	Type 4	TOTAL
Coast	2	3	2	7	14
Lowland	10	27	46	46	129
Midland	16	19	40	42	117
Highland	3	6	15	36	60
TOTAL	31	55	103	131	320

independent traders to one of dependent tenants.¹⁴¹ As the wealth of the church increased, so, too, did the alienation between the landowner and the tenant farmer; as the former system of reciprocal relationships was replaced with marginality, workers were divorced from control over the fruits of their labor. The Church and the new aristocracy became the labor brokers of the society, coordinating the labor of others in order to promote their own advancement.¹⁴² The Church and aristocracy were able to retain their power and wealth by forcing previously independent smallholders to become dependent on the economic and political infrastructures operated by the elite through their control over the single most important component of production in Iceland: land use. By law, all individuals were required to be affiliated with a specific farmstead, a law that persisted even after commercial fishing became

¹⁴¹ It has been estimated from census records that by 1700, 95% of all Icelandic households lived on tenant farms (Láursson 1967).

¹⁴² Arnold (1995, 88).

the dominant economic enterprise.¹⁴³ This persistence is surprising, as commercial fishing off the shores of Iceland was clearly important to first the Norwegian and later the Danish economy, as royal authorities actively tried to block foreign fishing vessels from entering Icelandic waters. These measures reached a boiling point by the early 15th century as the growing power of Hanseatic merchants threatened to usurp the Scandinavian cod and stockfish monopoly.¹⁴⁴ Even at this time, back on terrestrial Iceland, an agrarian-based economy, organized along feudal lines, persisted. Tying individuals to the land effectively prevented the development of urban areas around ports until the modern era, allowing the Church to continue its revenue flow from agrarian production. This system simultaneously permitted the power of both Church and state as each was able to maintain its own economic foundation with the result of creating a rigid social system of elites and commoners.

By the 18th century, the marginalization of small farmers reached a threshold, as laborers were now entirely excluded from the strategies and decisions concerning production, detaching them from the immediate returns on their own work investment. In the end, this detachment would quicken the decline of the power of the elite landlord since tenant farmers, lacking motivation, evaded performing any extra labor, resulting in poor land maintenance and a subsequent decrease in the net returns of production.¹⁴⁵ These developments reflect a societal transformation from collectivism to individualism, from a redistributive to a market economy, and from chiefly to state-sponsored political institutions.

These data indicate that the incipient state-level institutions of the 13th century are separate from those of the 15th century. We can conclude from the evidence presented here that the Imperial Economy Model is not supported by the data; instead, the Icelandic enterprise remained more or less politically independent prior to the 14th century, with a full-fledged state-sponsored feudal landscape developed by the 15th century. Likewise, the Autarkic Model does not account for three distinct phases of landscape use, which suggests that, on the contrary, local and long-distance trade played a crucial role in defining the Icelandic economy. As the world market shifted its interests away from Europe to new markets in the western colonies throughout the New World, Africa, and Southeast Asia in the 16th century, Iceland became less economically crucial to Scandinavian kings. It was not until the late 19th century, when new deck vessels and later new motorized trawling ships were invented, that Iceland, surrounded by the cod-rich North Atlantic, once again captured

143 Karlsson (2000, 224).

144 Gelsinger (1981, 193); Wubs-Mrozewicz (2008, 184).

145 Bolender et al. (2008); Hastrup (1998).

the attention of foreign investors. It was only during this intermediary period, however, that Iceland became more insular from global economic trends. The history of Iceland is one defined by its connections to a larger world as much as it is by its local experiences.

6.7 Conclusion

Three economic paradigms – the Autarkic, the Imperial Economy, and the Norse Economic Territory (NET) model – were examined in the Skagafjörður Landscape Project to determine how the political economy of medieval Iceland was structured, and to examine how this organization could potentially stimulate the process of secondary state formation. Each of these economic models were examined against settlement pattern data contained in the Multiregional Site Registry for Skagafjörður, covering a thousand year period of time and 610 sites located within an environmentally diverse area larger than 5,500 km². The results of this broad survey have been evaluated through a social network approach, which demonstrated that the organization of landscape use in Skagafjörður conforms closely to a scale-free network, rather than a clustered network, indicated by a hierarchy of site sizes and a wide distribution of domestic and non-residential areas within every type of environmental region. This type of landscape organization suggests that the data presented here cannot support the settlement predictions made by either the Autarkic or the Imperial Economy model, but instead are suggestive of an economy capable of maintaining an autonomous household provisioning system alongside a program of surplus production that could be used to fuel both local and international markets. These developments coincide with the creation of exclusive nodal points in the landscape, beginning with the trading harbor site at Kolkuós and the assembly site at Hegranes during the initial Settlement period, with additional nodal points created in the Sturlunga period such as the development of the bishopric at Hólar and the creation of church staðir sites, all of which were strategically located at crucial travel junctions. These nodal points linked together numerous hubs, such as large size 1 farmsteads, throughout the landscape, which in turn connected several small nodes, such as activity sites and farmsteads. The end result was a highly connected landscape, capable of facilitating the exchange of goods, services, and innovations consistently and effectively all without the aid of dense urban centers.

The organization and hierarchy of sites indicates that the economy of medieval Iceland in Skagafjörður was both diverse and potentially managed for facilitating exchange networks. Understanding the development of state institutions

in Iceland, therefore, must be seen at the hands of localized chiefs acting within a global arena, rather than as a society striving solely for local economic sustainability. Iceland was one of many North Atlantic nodes in what I have called the NET, and while it has always been assumed that trade was relatively unimportant, I have argued that my research shows the opposite. From the onset of colonization to the collapse of its chiefly political structure, Icelandic farmers and merchants actively pursued access into the NET, using the goods acquired from other NET members to fuel chiefly domestic exchanges. From these observations I have proposed a new model, the 'NET model', which suggests that the parameters of the economy were defined by local factors including the environment, as well as by the demands of a global economy. Historically, the global economy shifted away from its Viking Age focus on luxury goods toward a focus on staple goods typified by the medieval economy of the 12th century. We see this economic shift clearly in the settlement pattern data, as different ecological areas are intensified during different phases of the evolution of the landscape. Each phase of landscape development is likewise echoed in changes seen in the organization of the household economy, with the large farmsteads documented for the Viking Age followed by a steady increase in small farmsteads beginning in the 11th century. Traditionally, archaeological models have tended to center on the notion of autarkic economies, with settlers occupying only areas where an intensive animal-rearing strategy is possible. These areas could be found in the drier highland areas, where grass pastures could be easily created, making the highlands the most coveted of all ecological areas. The data presented here, however, shows that all ecological areas of Skagafjörður – highlands, lowlands, and the coasts – were settled immediately from the beginning of colonization in the late 9th century, with a higher ratio of large to small farmsteads established in lowlands and midlands, but a higher ratio of small to large farmsteads in the highlands. This settlement pattern implies a diverse economy, with different economic enterprises carried out in, and no doubt shaped by, distinct ecological regions. Likewise, a number of historical approaches to the colonization and later state development have tended to favor the Imperial Economy model, with a distant Norwegian king deploying bands of settlers throughout his North Atlantic holdings. The data presented here, however, do not support the settlement pattern predictions made by this model, as the initial settlement represents a kind of frontier setting, rather than a planned imperial colony. This is not to suggest that the settlers of Iceland saw themselves as divorced from Scandinavia; on the contrary, these settlers remained active in a global economy, with Norway as one of its principle commercial partners. These data suggest that trade was a vital motivation for colonization in Iceland, and continued to shape the society and the eventual development of secondary

state institutions. But rather than characterizing secondary state development as driven or forced by either local or external factors, the NET model suggests that state formation in Iceland would not have been possible without both types of stimuli. Settlement pattern trends demonstrate that the economy of Iceland consisted of the associated local enterprises of production, exchange, and consumption alongside foreign trade.¹⁴⁶

International trade must have been more difficult in the beginning, as the demand abroad for Icelandic goods would have been limited to luxury items like ivory, hides, furs, and falcons, all of which were in limited supply and difficult to control. The shift to economies fueled by the exchange of bulk staple goods by Phase II from the mid-11th to the 12th century, however, allowed Iceland, with its ready supply of wool, greater prominence in the NET, and as a result, I argue, transformed the structure of Icelandic society. These changes are readily seen in the restructuring of the household economy, as farmsteads were relocated and concentrated in ecological zones that could support pastoral farming and were converted from seasonal activity areas to permanent small tenant farms attached to large aristocratic estates. It was this synergy of local and global demands that prompted the development of secondary state formation in Iceland by the 13th century.

What remains to be examined is precisely how an economy centered on both household autonomy and commercial-oriented surplus production could have resulted in the development of a secondary state. In the next chapter, I will expand on Morton Fried's¹⁴⁷ and Barbara Price's¹⁴⁸ original models of secondary state formation, adding a new type of state, the synergistic state, a polity defined by the confluence of local and global contacts through the medium of economic and political exchange.

146 The potential importance of local and long-distance trade has also been documented at the site of Gásir in northeastern Iceland. Archaeological research (2001–2006) has shown that the seasonal 14th-century trading center at Gásir specialized in the export exchange of high-status commodities ranging from rare raw materials, such as walrus ivory and sulfur, to agrarian production, especially high-quality meat (Harrison et al. 2008). Further investigations of the surrounding hinterlands have demonstrated that the activities at Gásir held profound influence over the nature of the rural economy of medieval Iceland (Harrison 2009). Zooarchaeological evidence has demonstrated a rural economy devoted to the dual enterprises of both household sustainability and surplus production of livestock commodities that could be sold at the Gásir market. The growing evidence from Gásir suggests that trade, both local and international, was a vital component of the Icelandic economy and a key element in the Icelandic socio-political structure.

147 Fried (1967).

148 Price (1978).

The Formation of a Synergistic Secondary State in the Norse Economic Territory

Viking Age Europe was a well-connected world. Wherever we look in the archaeological record from this period we find evidence of communication and exchange across vast distances, connecting Europe with North Africa, the Middle East, and beyond. Taking this evidence into consideration, I have asked whether the same sort of connectedness applied to medieval Iceland and, if so, what role it might have played in its development of secondary state institutions. Previous models have vacillated between those that emphasize indigenous, autonomous state development¹ and those that emphasize the purely secondary, derivative nature of the Icelandic state and its relationship to existing complex societies.² I have argued in the preceding chapters that these perceptions are the result of methodological and analytical limitations to research on the process of secondary state formation in general, and in particular to the history of research on the development of political and economic complexity in the North Atlantic. My primary goal in this chapter is to reconsider the concept of secondary state formation in light of the new evidence that I have presented from my archaeological study on the economic organization of Skagafjörður. These data suggest that it is misleading to examine the process of state formation as the sole product either of local or external factors, but should instead be viewed along several different structural, spatial, and temporal scales.

The model I will outline here integrates both traditional neoevolutionary³ and post-processual⁴ approaches to the study of state formation as well as the application of Manuel Castells's⁵ theory on 'network societies', which conceptualizes social behavior as mediated through institutional structures that are themselves defined as the physical manifestation of the dynamic intersection between time and space. This cultural dynamism is what I term here a 'synergistic secondary state', a process that should be seen as *serendipitous complexity*; that is, an increase in institutional complexity, often unintentional, as the

1 Durrenberger (1998); Karlsson (2000).

2 Hastrup (2004).

3 Fried (1978); Flannery (1998); Johnson and Earle (1987); Service (1975).

4 Blanton et al. (1996); Crumley (1995); Feinman (2000).

5 Castells (1996).

result of local and global interaction that creates a medium for the sharing of new ways of thinking as well as access to new goods, services, and human skill. Under my model, secondary state institutions are the product of ongoing cultural practices that are situated at the intersection of independent but highly connected local and external activities. Unlike existing approaches to the study of second generation state formation, the synergistic secondary state model makes use of a social network methodology, examining the relationship between temporal, spatial, and structural components through both micro and macro scales of analysis. It is my hope that this new model will encourage researchers to view the development of social complexity as the product of long-term cultural processes that transcends local and global boundaries, resulting in a high degree of variability in the number and type of possible secondary states.

Following these approaches, I argue that the physical space where trade took place can become a shared interaction zone, a fertile ground for the exchange of not only goods, but also of ideas and social capital that can connect individuals from both near and distant locales. The end result of this shared and dynamic interaction was the formation of the Icelandic state. Using evidence from the Multiregional Settlement Registry (MSR) for Skagafjörður (see also Chapter 6), the aim of this final chapter is to examine how these three evolving factors can result in the formation of a secondary state.

7.1 Synergistic Secondary State Formation

When analyzing the development of social complexity, political anthropologists have found it useful to use Morton Fried's⁶ distinction between what he termed pristine and secondary state formation. While only a handful of societies fall under the category of a pristine state, they have overwhelmingly been the foci of research on the origin and development of social complexity. The argument follows that while pristine state development is an entirely endogenous process and deserves investigation to uncover its evolutionary path, secondary state formation is the byproduct of "pressure from already existing states,"⁷ and, therefore, needs no further analytical discussion. Barbara Price⁸ broadened Fried's classificatory scheme in her explanatory model of secondary states, distinguishing between those that developed through succession from a

6 Fried (1960, 1967).

7 Fried (1978, 37).

8 Price (1978).

preexisting state and those that developed via interaction among societies of varying degrees of political and economic complexity. While the path to statehood is historically different in each of Price's categories, they share the guiding hand of a fully-fledged complex state. Tacitly, Price is advancing Fried's notion that secondary states are driven solely by external stimuli, leaving little room in her model for localized variables such as ecology or pre-existing social structures. We can summarize these views as the assertion that secondary states develop primarily as a survivalist reaction on the part of less complex societies in response to a world of encroaching states. By framing our discussions in this light, however, we tend to bias our scope of investigation and emphasize, or perhaps in some cases over-emphasize, the *active* role played by state actors over the *inactive* role performed by less politically complex populations in the course of their own development of secondary or second-generation state structures. At the same time, we tend to privilege strictly localized factors for primary state formation, a trend that is likewise seen in studies on the much less frequently researched situation of secondary states formed via succession from existing states. In both types of situations the development of state-level social organization is viewed simply as the "course of normal cultural evolution."⁹ Most examinations of second generation states have centered on colonial takeovers, and have therefore, looked exclusively to external factors for the process of state formation out in the periphery. What has not been developed is a model that goes beyond these classificatory schemes and examines state formation, whether first-, second-, or even third-generation, as the confluence of internal and external processes. This may help to explain why the Icelandic case study has been treated similarly under separate models as a situation of internalized developments and as a colonial takeover (see Chapters 2 and 3), with neither model capable of fully incorporating all existing data from the medieval period.

An alternative to models that emphasize state formation from either endogenous or exogenous factors is what I am calling here the synergistic secondary state model, which incorporates traditional evolutionary models described above¹⁰ with Castells's notion of a networked society. The advantage of traditional evolutionary models are their focus on change over time, often emphasizing how changes in power dynamics can result in major structural shifts within a society. As I have shown in the preceding chapters, we can add to these models theories that combine world systems and earth systems,¹¹ to

9 Rhee (1992, 192).

10 See also Chapters 1 and 2.

11 Bergesen and Bartley (2000); Hornborg and Crumley (2007).

examine how the introduction of new stimuli from natural and geopolitical ecologies can likewise over time result in social change. What is left out of these approaches is a way to examine precisely why, even when the variables are the same, social change occurs in some cultural situations and not in others. I argue that what is needed for any model that proposes to examine cultural transformations and the development of increased social complexity is a method for investigating the *processes* behind social change, rather than merely identifying the variables that often correspond to structural shifts.

One useful approach can be found in the work of Manuel Castells. Through his analysis of the Internet Age, Castells unlocked clues on a widespread cross-cultural phenomenon: communities rarely exist in isolation; rather, they are intricately linked to one another by both time and space. The reason for this connectivity is that while we often rightly perceive time as an active agent constantly marching ahead, we have incorrectly identified physical space as a static, passive entity. But space, on the contrary, is a highly dynamic agent capable of constant and pervasive change, as it is the physical support for the ways people live in real time.¹² Although cultures achieve an insular sensation by delineating artificial boundaries around space, creating geopolitical landscapes for example, we must consider that people in reality actually operate and are shaped by forces both within and beyond these imaginary divisions. To study any society one must be willing to view space, time, and human action within broader frames of reference, which Castells terms “space of flows.”¹³ A space of flows is a physical setting for social interaction wherein multiple variables can come together in an obvious material way, allowing a researcher to examine the processes behind individual and institutionally situated behavior. In contrast to an isolated or restricted place, a space-of-flows area is defined by the following characteristics: (1) a medium through which information or goods can flow or transmit; (2) items to flow through the medium; and (3) nodes through which these ideas or things can circulate and connect to other points within the dimension of a space-of-flows locale. Part of what defines this space is human interaction, as the movement or flow of goods and information brings people together into a continuous and real-time arena. This is why even a high degree of connectivity among hundreds, thousands, or even millions of actors is not overwhelming for us to fully conceptualize, as the medium of a space of flows reduces any sense of vast distances or long time spans. The end result is a phenomenon that mathematicians have termed ‘the small-world effect’, or by its more popular moniker, the ‘six degrees of

¹² Castells (1996).

¹³ Castells (1996, 412).

separation', the idea that every individual is connected to any other given individual anywhere in the world by six or fewer acquaintances.^{14,15} These connections make the world appear small and navigable, a sensation made possible only through interaction areas or space-of-flows locations. The dynamism that defines a space-of-flows area, where space and time are connected, is also what makes for an environment prime for social innovation.

For Castells, the medium of the space of flows is information technology (IT) such as the Internet, but arguably there are other types of mediums that can serve the same purpose. While Castells intended his theory to be narrowly historical and applied specifically to the 'Internet Age', archaeologists have long noted a similar trend seen in the evidence for cultural contact through international trade networks. Trade networks arguably were one avenue for creating a highly connected ancient world,¹⁶ where the global and the local converged, reducing the physical and social distances that separated communities. Individuals became linked through the exchange of goods and ideas as well as through the reification of social relationships concurrent with these exchanges.¹⁷ These relationships had to be continually defined and redefined, calling to our attention the dimension of time. Archaeological and historical studies have at their disposal diachronic datasets, adding to Castells's theory the element of change over both short and long periods of time. To conceptualize this view, archaeologists have increasingly turned to the *Annales*¹⁸ historical school's approach¹⁹ to studying the past, which advocates that modern events can be examined within three time-sensitive categories: as *événements* (events in the moment of the present time), as events connected to a suite of past actions *moyenne durée* (medium duration), and as the product of the *longue durée* (long duration) of historical actions. Braudel argued that traditional approaches to history have focused on timescales within the *événements* and *moyenne durée*, rarely considering how the historical present was

14 Buchanan (2002, 38).

15 Mathematicians have demonstrated that the key to unlocking the mystery behind the small-world phenomenon is simple: with each degree, the number of acquaintances increases exponentially. For example, if every individual has 50 acquaintances, and those 50 acquaintances have their own 50 acquaintances, by the sixth degree the number of individuals connected to our first individual is greater than 15 billion – a number far larger than the size of the world's population (Buchanan 2002, 38).

16 LaBianca and Scham (2006); Oates (1993); Renfrew (1986).

17 Godelier (1999).

18 The *Annales* historical school is structured around the concept of *mentalité* – the suggestion that cultures and societies can only be understood within the context of their contemporaries rather than in relation to their modern counterparts (LaBianca and Scham 2006, 2).

19 Braudel (1995).

shaped by events within the *longue durée* of time.²⁰ Analyzing the past within a deep-time approach dramatically changes how we view the present, as variables take on a sharper and more complex shape once the entirety of their history is uncovered.

When we apply Castells's notion of dynamic physical space in tandem with Braudel's theory of time, we get a new and innovative synergistic model that conceptualizes cultural change as the product of complex interactions over multiple geographies and deep periods of time. This approach is especially useful for examining the transition from chiefdom to state-level social organization, as long-distance trade networks are an integral component of the political economy of most chiefdom-level societies. The political and economic system of any chiefdom is dependent on its connection to the outside world and on its ability to use these networks to acquire goods, services, and other forms of social capital that can subsequently be translated into mechanisms to fuel local political and economic enterprises. It stands to reason then that trade, on both a local and global scale, can materially represent a space-of-flows situation, thereby providing researchers with the rare opportunity of uncovering the suite of processes undergirding the formation of state-level dynamics. While the merit of this approach is that it transcends the teleological limitations of traditional evolutionary and world-systems theory approaches,²¹ this new paradigm has one remaining problem: inherent in the model itself is a high degree of abstraction – it presents a situation where all variables are meaningful and crucial, prompting the question of how one can ever hope to take an accurate inventory and manage all of the variables that must be considered. As a solution, I propose that this task can be made possible and manageable through social network analysis.²² In Chapters 5 and 6, I demonstrated how network analysis could be applied to regional settlement data in order to uncover past economic behavior by identifying different types of system structures (clustered or scale-free), but this is only one small application of a network methodology. Social network approaches can in fact be applied to any form of social behavior, including secondary state formation. The benefit of social network models is that these frameworks avoid the pitfalls of anticipating specific causal factors associated with social change, and instead seek to examine simultaneously multiple variables (termed as hubs and nodes in social network diction), focusing not only on the presence of these variables, but on the relationship among them within a dynamic and

20 Braudel (1995).

21 See also Chapters 2 and 3.

22 Barabási (2003).

open system.²³ The results of this type of analysis are often surprising and frequently suggest that *prime movers* are rarely the sole spark of social change; rather, social change is the product of the types of relationships and the interaction between numerous local and external stimuli acting within an open system.²⁴ We should not, however, conclude that all variables impact the system evenly; it is far more likely that the relationships among some variables weigh heavier than others. The strength of network analysis is that it allows a researcher to gauge the degree of impact a specific variable or node might have on the overall system, by making predictions on how its introduction into the network will affect the relationships among pre-existing variables. This is achieved by the examination of the type of relationship that exists between any two variables. Relationships between nodes or variables are defined by social network analysts as 'social ties' that can be identified as either weak or strong (see also Chapter 4), but preference is never given to any single suite of relationships. In fact, network analysis demands the examination of the relationships not just between strong-strong or weak-weak dyads, but also between strong and weak relationships, arguing that all three types of ties are necessary in any social network. The most striking feature of network analysis is the observation that while one may assume that strong ties are more vital than weak ties, quite the opposite is true when examining social change.²⁵ Strong ties promote equilibrium, but weak ties enable networks to branch out, expanding the overall system, a process that can ultimately result in changes to the structure of that system or network.²⁶ If we view a society as one type of networked system, we can then examine social action as the dialogue between hubs and nodes, identifying the nature of this discourse as either a weak or strong relationship, allowing us to then make predictions on how these fluid connections among variables can result in societal change. Social network models suggest that weak ties offer new opportunities in a society by establishing contacts beyond localized networks, which will have consequences for the society as a whole and can result in new structural arrangements.²⁷ Strong ties, in contrast, help to maintain structural stability and equilibrium. While social network analysis owes much of its heuristic value to existing models,²⁸ the true

23 Barabási (2003); Strussfogel (2000, 169).

24 Adams (1988).

25 Granovetter (1973).

26 Adams (1988); Buchanan (2002, 34–47); Strussfogel (2000).

27 Granovetter (1973, 1363).

28 For example, social network approaches owe much to anthropological and sociological theories on structural-functionalism found in the work of Durkheim, Tönnies, Simmel, and Gluckman (Freeman 2004).

innovation is its applied methodology. Rather than focusing on types of variables, social network approaches instead focus on the type of ties that connect any two or more variables together. It is this new perspective that can help researchers to better understand why social change occurs in some cases and not in others. It may also hold the clues as to why there can exist many different types of both primary and secondary states.

Summing up these concepts, I define the synergistic secondary state model as an approach that borrows from evolutionary and world-systems theory the idea that social change is constantly occurring over both short and long periods of time and that the outcome of the introduction of new variables can result in somewhat predictable results. Rather than focusing on the variables themselves, however, the synergistic model, borrowing from Castells, Braudel, and social network theory, examines the relationships among variables over long periods of time and across both local and international geographic settings. Time and distance are reduced by space-of-flows mediums, such as trade and technology, creating environments fertile for social change. The application of a social network methodology allows a researcher to manage and consider multiple lines of evidence, incorporating data from external and local variables. The result is a fuller examination of how and why state institutions develop in a secondary context.

7.2 Archaeological Correlates and Application of the Synergistic Secondary State Model

In the last chapter, I suggested a new economic model, the Norse Economic Territory (NET) model, which makes use of the social network approach described above. Defined within a social network paradigm, the NET model avoids the pitfalls of examining *either* internal or external variables, but instead investigates the interplay between these dynamic and connected constituents. Until now, methodological limitations have consigned the potential influence of trade and communication between Iceland and other nations simply to the category of the unknowable. While this verdict may ring true within the traditional study of the archaeology of trade during the Viking Age – an approach that tends to focus on the distribution of broaches and pins, worked ivory, beads and silver – I have suggested a different approach. For places like Iceland, where the most widely distributed commercial goods are nondurable export items, namely woolen products²⁹ and dried fish,³⁰ and imported goods such as

29 Ingimundarson (1992).

30 Edvardsson (2005); Perdikaris and McGovern (2007).

grain and clothing³¹ that stand little chance of appearing in the material record, we need to find an alternate means of examining production, distribution, and consumption. My own research on trade began by participating in the excavations at the medieval harbor site of Kolkuós in the Skagafjörður; while doing so has provided an insightful look at the types of goods that were entering the country, it became clear that a trading center alone could not adequately address the entire scale of exchange as it lacked information on the types of goods that were flowing out the country. What was needed, then, was a way to uncover additional evidence about local economic production. One alternative to an artifactual-based approach is to trace the development of landscape organization over time as a proxy for the practice of the political and economic transactions embedded within these physical, palimpsestic landscapes. I hypothesized in Chapter 4 that settlement patterns could be used as an indicator of economic activity in rural Iceland, and that if Iceland held international economic pursuits, then we should expect see this reflected in settlement strategies. I also predicted that if Iceland suffered severe environmental degradation (see Chapter 2) or was under the direct control of the Norwegian crown throughout its medieval history (see Chapter 3), then we should likewise anticipate seeing these actions reflected in where and how people established their households. What my research uncovered, however, was a mixed economic strategy that incorporated both household self-sufficiency and the potential for surplus production of woolen goods. This evidence indicates that models centered on resource scarcity or foreign domination as the driving forces behind state formation in Iceland need to be reconsidered.

Under the synergistic secondary state model, the economy and subsequent sociopolitical structure of Iceland are defined by localized events, including factors such as the environment and chiefly leadership, acting within the parameters of a global political economy that in turn helped to fuel local systems of exchange and politics. In the discussion that follows, I will argue that examining the data through a social network approach demonstrates that state development in Iceland followed a trajectory similar to that of state formation in Scandinavia, with an emphasis on devising strategies to regulate the production of an agrarian landscape, a production that was vital to the management of local and long-distance economies and systems of political power. The North Atlantic did not languish in isolation, but remained connected to a global system; it was this pervasive connectivity that defines the processes of secondary state formation in Iceland. The same, I argue, is likely true of many other cases of secondary or tertiary state formation; the Icelandic case study

31 Þorláksson (1992).

thus constitutes a first step in developing the synergistic secondary state model.

While social network analysis argues that there is no definitive means to predict the types of changes that will occur within an open system, researchers can deduce a range of possible outcomes that the introduction of specific variables will have on the overall architecture of the social system. My research on medieval Iceland suggests that the relationship between three crucial variables³² must be considered in explanations of how different types of secondary states can form: (1) the degree of local political and economic integration present before state systems developed; (2) the ecology of the landscape and its ability support economic surplus production before and after the development of state institutions; and (3) the extent and nature of interaction between incipient states and their neighbors with fully-fledged state institutions over short as well as long periods of time. From these three variables, a number of predictions can be made about the conditions under which state-level organizations are likely to develop.

We can anticipate that when a pre-state society is already socially, economically or politically integrated prior to developing a relationship with a state society, it will likely develop some state-level organization relatively quickly as some of the necessary infrastructure is already present; however, this trait, which is commonly found among chiefdoms, in itself is not enough to ensure the emergence of state-level complexity. After all, not all chiefdoms become states. It is the combination of the existing social infrastructure with other variables that can predictably result in the formation of a new second-generation state. In an agrarian-based society such variables include the environment and a society's ability to harness sufficient agricultural production to ensure not only the survival of a household, but to guarantee a surplus of goods as well. If the environment cannot accommodate these aims, it is unlikely that state-level organization will ensue, unless the society can supplement its resource base through trade networks. This is perhaps why interaction with mature state-level societies is so crucial in the formation of secondary states: under specific conditions, access to consistent and reliable trade networks can buffer the subsistence economy enough to promote new economic avenues. Participation in these new enterprises can result in social change.

One can likewise reliably predict that if a society's relationship with a mature state is characterized by conquest and domination, the society will likely emulate the state organization of the imposing state; however, not all

32 My approach builds on the work of Parkinson and Galaty (2007) who presented a similar model for state development in the Aegean (see also Chapter 3).

relationships between mature and less complex societies are defined by such stark degrees of dominance. Conquest is an expensive strategy, as seen in a large number of historical situations in which the relationships between state and non-state polities are structured around receiving and ensuring mutual benefits.³³ Trade is a likely incentive to forge relationships between polities. We can hypothesize that when the nature of interaction between a non-state society and a mature state lacks outright domination, if secondary state-level organization does develop it is likely not to be a direct emulation of its more socially complex partner, but rather an entirely new social structure. The logic behind this prediction is the lesson learned from the 'strength of weak ties'.³⁴ In a situation of a colonial takeover, the social system of the peripheral society is characterized predominately by strong ties (what social network analysis calls a clustered system), as the imperial polity aims to consolidate and manage all of the nodes and hubs within that system or society. In a situation without direct imperial rule, the system is defined by a combination of strong and weak ties (what social network analysis calls a scale-free system), with local leaders often serving as the only real connection to foreign polities. These local leaders are the weak ties, and it is their relationships with individuals in state polities abroad that can produce a 'branching-out' phenomenon, resulting in new social arrangements as long as the pre-existing infrastructure and local environment and economy of their society can support these relationships. The distinction between systems and structures indicates that there are different types of connectivity, with each type able to respond differently to local and external variables, resulting in distinct social outcomes. The type of connectivity, therefore, provides us with an important predictive model for when and how secondary state organization may develop.

Each of these conditions can be investigated through a number of potential archaeological correlates, but the evidence under consideration must be able to detect both short- and long-term change as well as both local and external variables. I will demonstrate the utility of this approach by examining the processes of secondary state formation in medieval Iceland. To do so, I will turn again to regional settlement pattern data from Skagafjörður, rank-size statistics as a proxy for political and economic integration alongside soil morphological data as proxy for environmental conditions. Lastly, to examine the relationship between Iceland and the state-level societies it came into contact with, I will build on my discussion of landscape organization presented in the preceding chapter, weighing the evidence for greater or lesser social integration over

33 Stein (2005).

34 Granovetter (1973).

time. Using evidence from multiple datasets not only encourages the holistic outlook requisite of the synergistic model, but also provides a more robust and diverse view of past behavior.

7.3 The Social Structure of Scandinavia

Following this methodology, our analysis begins with determining the nature of the pre-state political economy of Iceland. To do so requires looking at evidence not only from Iceland, but also from Scandinavia, as the settlers in Iceland did not appear *ex nihilo*³⁵ but shared a cultural heritage with other Scandinavian and North Atlantic societies.

By the time Iceland was settled in the 9th century, the political structure of Norway was that of a first-generation secondary state located at the northernmost border of a world system that connected European kingdoms with the Byzantine and Muslim empires. The process of state development in Norway was centuries in the making, as local chieftains, through economic and political contact with more mature European states, entered into a 'negotiated-peripheral'³⁶ relationship with a much larger world system. This relationship was created by local chieftains setting themselves up as 'cores' in a network of rural trade throughout Scandinavia. As a negotiated periphery, Norwegian elites determined the conditions under which they engaged in trade and the adoption of foreign cultural ideologies, remaining politically independent but highly connected to prevailing pan-regional affairs. By the 8th century, the sociopolitical structure of Norway had developed into a federation of a handful of small political units, known in Norwegian as the *smaríke*, which were each governed by a nascent aristocratic class and a shrinking number of regional chieftains. Archaeological data suggest that these new elites were actively pursuing trade within a rural economy to acquire high-value items associated with social prestige that could be brought to both local and international markets. An analysis of settlement pattern data for this period illustrates the intensification, for example, of extracting non-agrarian resources in areas that had been previously unoccupied.³⁷ Archaeological excavations in these more 'marginal' regions, such as the coastline, dense woodlands, and high mountainous stretches of Norway, has shown that fishing, hunting, iron extraction, and animal grazing activities all expanded during the 7th and 8th

35 Clifford (1997).

36 Kardulias (1999).

37 Andrén (1989); Crumlin-Pedersen (1991); Myhre (2000).

centuries.³⁸ Viewed as a case of localized isolation, these settlement patterns would suggest that more desirable lands had either become unavailable or undesirable due to environmental duress;³⁹ however, within a systems approach, which considers local as well as global influences, these data suggest a complex system of multi-regional exchange that coincides with the development of small towns and royal courts in Norway.⁴⁰ It is hypothesized that Norwegian aristocrats facilitated these regional enterprises through the development of areas likely deemed undesirable for farmsteads, but attractive as areas for resource extraction. Elites encouraged chiefs to organize and send seasonal laborers into these areas, creating an active system of exchange connecting chiefs with the burgeoning system of Norwegian bureaucrats and royalty. These landscape developments allowed this new class of elites to bring more goods to an international market and in the process introduce new luxury goods from abroad to the existing exchange systems organized by local chiefs, who in return provided the labor and raw materials necessary to finance state economies, either through staple goods such as wool, or through harder-to-procure materials such as iron that could be readily found in the marginal hinterlands of Norway. For several generations this system operated in the best interest of both parties; however, by the end of the 9th century, Norwegian kings, following the precedent of their Danish counterparts, had joined in an active competition over trade routes and commercial centers in the global economy, echoing the economic organization of their Frankish and Saxon neighbors. Coinciding with these new economic enterprises were changes to the sociopolitical structure in Scandinavian kingdoms, changes that ultimately brought about more centralized and unified Scandinavian states. Monarchs and courtly aristocrats co-opted chiefly exchange systems by imposing taxes on luxury goods and aimed to regulate the flow of domestic production by centralizing farmstead settlements, which allowed for better control over agrarian and non-agrarian resources alike.⁴¹ These reforms led to a decline in

38 Myhre (2000, 35).

39 Traditionally, the 7th and early 8th centuries were viewed as a kind of 'dark ages' in Scandinavia, characterized by economic stagnation and political upheaval. This view made the onset of the Viking Age in the late 8th century all the more inexplicable, as the *sudden* burst of Nordic warriors and merchants descended upon Europe (see also Chapter 1). Recent archaeological research on this period, however, demonstrates an increase in economic activity, rather than stagnation, along with a system of complex exchange, which may indicate movement towards political centralization rather than fragmentation.

40 Andréén (1989).

41 Myhre (2000).

power and profit for the now-disenfranchised chiefs, who nevertheless continued to seek new avenues of distant trade contacts as a means to legitimate and finance their own political authority at home. These events ultimately sparked the Viking Age, as competition between a powerful class of landed elites and petty chiefs made new trading ventures abroad all the more desirable.

This new economic system was a synthesis of traditional chiefly redistribution and a more commercialized market system that was facilitated at central places. These central places began at chiefly estates and were later moved to churches and royal centers where the traffic of exchange became less personalized and more strictly regulated through a formal system of taxation.⁴² The revenue generated from taxation provided new investment opportunities, which in Scandinavia led to greater mercantile activity abroad, in turn resulting in greater control over local labor and the intensification of the production of commodities that could elicit the attention of consumers abroad. These developments not only helped spark the Viking Age of travel, trade, and raids; they also provided Scandinavian settlers with a model for coordinating exchange systems, at the hands of chieftains, between regional and global networks throughout the North Atlantic and beyond.

Contrary to how social scientists typically expect state-level economies to be organized, the Scandinavian state economy operated without extensive urbanism, demonstrating that cities are not necessary to facilitate local and long-distance trade. One outcome of applying inadequate models to the study of state formation in a secondary developmental context has been a reticence to accept economic systems that diverge from the hallmark characteristics found in primary state economies as equally complex state-level structures.⁴³ Primary state economies are often equipped with urbanism to house full-time craft specialists capable of carrying out mass commercialism. Secondary states can possess these traits, but they can also differ significantly. In medieval Scandinavia, while urbanism was slow to develop, its economy was clearly both commercial and grounded in agrarian pursuits rather than in the production of specialized crafts.⁴⁴ The agrarian nature of the medieval Scandinavian economy has led to its classification as a small-scale 'gift/natural economy'⁴⁵ despite evidence for a more 'market/money economy', such as monetary systems of minting coins⁴⁶ and the development of marketplaces located near

42 André (1989, 588); Sindbæk (2006).

43 Gregory (1997, 119–162); Halperin (1988, 1994); Smith (1987, 297–301).

44 Rosedahl (1998); Sawyer (2001).

45 Grierson (1959).

46 Coupland (2007); Metcalf (1984, 15).

seaports.⁴⁷ Economic activities of this type are more typically found in state societies than in chiefdoms. The reality is that the economy of medieval Scandinavia, like the rest of the Germanic Europe, contained elements of both a gift and a market economy. This style of exchange is perhaps true of nearly all economies,⁴⁸ rendering the distinction between these categories not only artificial but also unnecessary. What is significant about these categories, however, are the implied relationships behind these socioeconomic transactions. Research throughout Scandinavia and the British Isles has shown that long-distance trade potentially played a crucial role in the development of their social complexity, with social interactions carried out not in cities but in what Andrén has termed a ‘congested countryside’.⁴⁹ Within a landscape where the line between town and country was blurred, trade was organized first under the direction of local chieftains, and later by kings and church leaders.⁵⁰ Surprisingly, only a few hubs or nodal points connected to smaller, more local central places were necessary to connect Scandinavia with the outside world.⁵¹ Nodal points, such as trading center at the site of Kaupang in Norway, never rivaled in size or activity the contemporary *cities* like York or Lübeck, but they shared the ability to regulate and monopolize long-distance traffic. These data challenge our traditional list of necessary traits used to classify a society as a state, suggesting that large-scale urbanism may not in fact be necessary.⁵² By the 11th century, centralized kingdoms dominated the Scandinavian political landscape, following the formation of a feudal state structured by an ecclesiastical organization.⁵³

Keeping in mind these patterns of behavior, we can now employ a broader Scandinavian perspective to the development of state formation in Iceland. It is likely that the settlement pattern data from Norway during late Iron Age – the period from which state institutions first developed in Scandinavia and the world from which the Icelandic settlers emerged – will have parallels in Iceland. The goal here is to examine how these patterns of behavior converged to create new social arrangements within Iceland.

47 Christophersen (1999, 161–165); Gläser (1999).

48 Godelier (1999); Moreland (2000a, 2–17).

49 Andrén (1989, 588).

50 Júlíusdóttir (2005).

51 Carlie (2008); Sindbæk (2006, 2007).

52 Similar arguments have been made for Old and New Kingdom Egypt (Baines and Yoffee 1998; Cashman 2006), suggesting that this phenomenon of states without extensive urbanism is not restricted to early medieval Scandinavia (see also Chapter 1).

53 Andrén (1989); Moreland (2000b); Näsman (2000); Vésteinsson (2000b).

7.4 Social Structure and Ecology of Pre-State Iceland

As discussed in Chapter 1, the initial social structure of the Norse colony in Iceland centered politically on a network of chieftains and landed elites, supported by an agro-pastoral subsistence base. Building on the primary fieldwork data presented Chapter 5 and on the expansive pan-regional overview presented in Chapter 6, I have concluded that the economy of pre-state Iceland, echoing the broader patterns observed for Viking Age Europe, was not based solely on self-sufficient agrarian pursuits (clustered network system), but was instead characterized by a diversified economy (scale-free network system) that conformed to both local environmental parameters and global market demands from its participants in the Norse Economic Territory (NET). The settlement pattern data presented here has demonstrated that the settlement of Iceland was motivated by economic interests similar to those documented in the Norwegian frontier, with site establishment occurring in multiple resource zones, not only in areas where a self-sufficient rural economy could be maintained. Likewise there was significant variation between sites, as seen by the existence of multiple types of sites, rather than a system of unified, homogeneous farmsteads. Equally important, but contrary to popularly held theories on landscape degradation, the environment of 10th-century Iceland provided a number of resources, such as walrus ivory and sulfur, which would have drawn the interest of foreign markets. I hypothesized in Chapter 6 that access to these goods explains why the initial landscape organization of Iceland included settlements in all ecosystems (coastal, lowland, midland, and highland), allowing settlers to maintain self-sufficiency as well as to participate in the international Viking Age market. This pattern reflects similar developments seen in Iron Age Norway as well as in other Norse colonies throughout the North Atlantic, with outposts positioned within areas where access to raw materials or hard-to-acquire resources could be extracted.

We can also see this dual-interested organization reflected in the level of political integration between sites in pre-12th century Iceland. Political integration can be discerned archaeologically from rank-size statistics: logarithmic plots that rank sites by their size. According to Zipf's Law, sites within state-level political organizations will be ordered in a rank-size plot with sites plotted close to a log-normal line, demonstrating a high level of integration.⁵⁴ Autonomy, on the other hand, is reflected with sites ordered away from log-normal, falling along a convex curved line. Throughout the Settlement period (870–1000 A.D.) and Early Medieval period (1000–1104 A.D.), the rank sizes of

54 Johnson (1980).

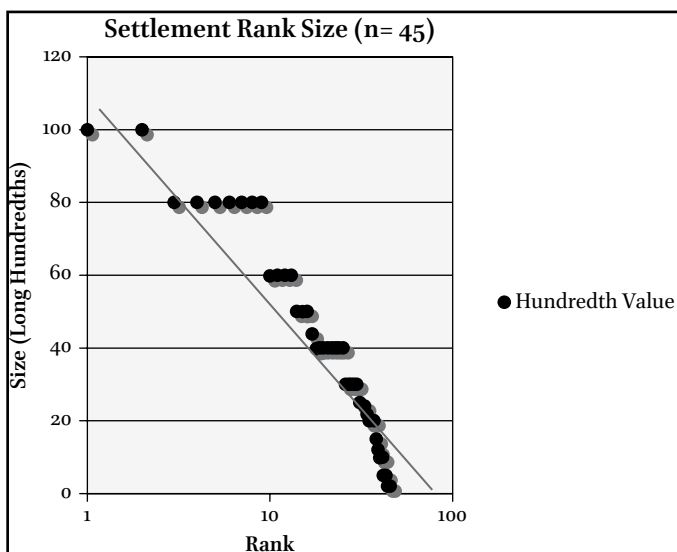


FIGURE 64 Rank-size plot for farmstead sites for the Settlement period

sites in Skagafjörður fall along convex curves, indicating a level of political autonomy among sites (see Figures 64 and 65). The moderate level of integration among sites shown in the rank-size plots corresponds well to a non-state, chiefdom society where sites are linked together through the activities of redistribution and exchange. Interestingly, there is greater integration between large- and mid-sized sites (types 1–3) than there is with small sites (type 4). In fact, the lowest level of integration is between very large farmsteads (type 1) and small farmsteads (type 4), possibly indicative of sumptuary laws regulating social relationships between elites and commoners. The geographic distance between site types 1 and 2 likewise suggests a healthy degree of competition among elite households, fitting well within our model of landscape organization. These data support the hypothesis that farmsteads during the earliest phases of occupation were politically united by the efforts of chieftains, while still maintaining a degree of autonomy and competition within a frontier setting structured around both self-sufficient agrarian pursuits and the acquisition or production of goods for local and international markets. The autonomy of small farmsteads, conversely, may suggest that these households participated very little in trading activities. Amidst the efforts to acquire goods for market trade and social redistribution this finding is somewhat surprising, but appears less anomalous when we consider the existence of specialized activity areas (see Chapters 5 and 6). It is likely that specialized activity areas were used to produce goods for trade and local exchange rather than for integrating the labor and resources of small farmsteads into an elite economy.

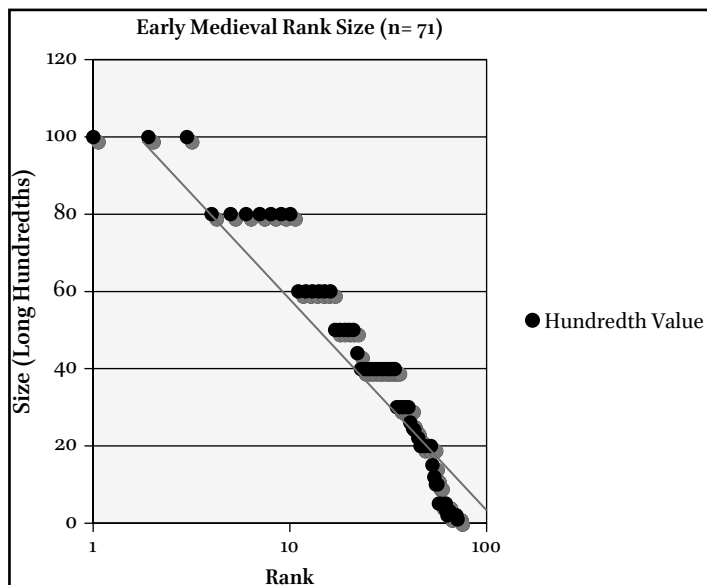


FIGURE 65 Rank-size plot for farmstead sites for the Early Medieval period

Interaction among sites was made possible through key nodal points and hubs positioned at strategic locations throughout the landscape, representing a clear example of a scale-free structured system. The most important site of interaction and exchange in Skagafjörður was Kolkuós, the site of a natural harbor and seasonal trading center.⁵⁵ Kolkuós possesses all of the characteristics of Castells's space of flows and what social network analysts term a nodal point: (1) a location and a medium (merchants) through which goods can flow; (2) local and foreign items to flow through the medium of exchange; and (3) nodes (consumers) through which these goods could circulate and connect to other points (households) within the landscape as a whole system. Connected to Kolkuós is a larger network of hubs or large type 1 sites, including two very large⁵⁶ sites at Viðvík and Flugumýri. The chieftain at Viðvík owned the land at Kolkuós⁵⁷ and likely acted as the hub between the harbor and the rest of the valley. Flugumýri, on the other hand, is situated at the intersection between the lowlands and highlands, making it a potentially powerful hub capable of connecting farmsteads from all eco-regions of Skagafjörður together. By the end of the Early Medieval period, the site at Stóra Akra was established and it is positioned, as is Flugumýri, at a juncture between the lowlands and the highlands, indicating that access to the highlands

55 Traustadóttir et al. (2004).

56 Viðvík and Flugumýri are each valued around 100 hundredths (see Chapter 6).

57 Landnámabók.

was perhaps becoming more important. Linked to these three large sites are an additional seven sites⁵⁸ that are likewise strategically positioned within the landscape. All of these sites are located along either water or land routes, making these sites accessible to travelers, producing a network of smaller-scale space-of-flows points within the landscape. The end result is a highly connected landscape that maintained a balance between complete autonomy and the kind of political integration found among state-level societies.

The social structure of pre-state Iceland was, therefore, highly conditioned for economic and political integration, resembling the patterns documented for other parts of Scandinavia. Equally important was Iceland's continual connection to the outside world through its economy; however, as the degree of political integration suggests, not everyone held access to these markets.⁵⁹ The connections between local Icelanders and foreign individuals affiliated with the larger world can, therefore, aptly be defined as a weak-tie relationship under a scale-free structured social system. Operating through a space-of-flows medium, these exchanges became the epicenter of social dynamism. As these exchanges were backed and valued by a local social system – namely, chiefly redistribution well supported by an environment capable of surplus production – contact with markets and individuals abroad would have been highly coveted, meaning that their influence on Icelandic society was significant and capable of achieving what social network analysts term a 'branching-out effect' or a transformation of the system. Under the synergistic secondary state model, we can predict that a change in access to goods and/or a change in the relationship between local and international polities could result in the formation of new social arrangements that incorporate elements of the pre-existing structure along with elements borrowed from existing mature states.

7.5 Social Structure and Ecology of Sturlunga Age Iceland and the Emergence of a State Society

By the beginning of the Sturlunga period (1104–1300 A.D.) a number of changes were well underway in Iceland. These transformations include local

58 These sites, all of which have a value between 80 and 61 hundredths include: Vík (close to the fjord entrance), Viðimýri (at a crossroad), Frostastaðir (river route), Hólar (pass between Skagafjörður and Eyjafjörður), Ás (pass between the valleys Hjaltadalur and Kolbeinsdalur), Goðdalir (intersection between the midlands and the highlands), and Reynistaður (river route). There are an additional six sites valued around 60 hundredths that were also potential hubs, such as Stóra Seyla (river route).

59 Cook (1997).

environmental shifts as well as changes in international economic trends throughout Europe. The coalescence of these localized and globalized events each played a decisive role in the development of secondary state-level dynamics in Iceland. From a localized perspective, soil erosion regimes have been documented in some highland areas of Iceland (especially those within the volcanic rift zone),⁶⁰ but by and large, the soil morphological data from Skagafjörður demonstrate healthy soil accumulation rates in the midland and lowland areas (see Chapter 2). I have further argued that a morphological change from Histosol-Histic Andosols to Brown-Gleyic Andosols resulted in higher soil organic content (SOC) levels that could promote better drainage in the wetlands, resulting overall in an increase in the potential soil productivity and surplus production for lowland and midland farms throughout the Sturlunga period. This environmental development alone, however, does little to explain why major social shifts occurred simultaneously throughout Iceland. There is no one-to-one correlation between soil morphology and the sudden appearance of a new class of elites (the *storgoðar*), the adoption of a new ideology (Christianity), or the heightened focus on sheep-rearing practices.⁶¹ On the contrary, I have argued that these developments paralleled an economic shift from a Viking Age luxury-based market to a Medieval Age bulk subsistence goods market (see also Chapter 6). For Iceland, this economic shift allowed it to become a bigger player in the NET, made possible only through environmental changes that increased soil productivity, which meant larger grass harvests that could be converted into more abundant hay fodder, which in turn could be converted to larger flocks of sheep for wool production. Wool, in turn, became a prime Icelandic commodity in the global market.

These developments would not have resulted in secondary state formation, however, without the support of changes to the Icelandic social infrastructure. In Chapters 5 and 6, I identified changes in the landscape organization of Skagafjörður, characterized by a profound increase in the number of smaller, full-time farmsteads that appeared in all environmental zones throughout the Sturlunga period. Paralleling this development was a crucial transformation in the political integration of Skagafjörður. The rank-size plot of farmstead sites (see Figure 66) shows a less convex curve that is approaching log-normal; in other words, farmstead sites in the Sturlunga period were far more politically integrated than they had been in the preceding periods. This rank-size plot also indicates a new addition to the political makeup of Skagafjörður: a clear primate center. A 'primate center' is a point on the plot that is ranked higher than any other point by an extreme or exaggerated degree, and indicates

60 Dugmore et al. (2009).

61 Dugmore et al. (2006).

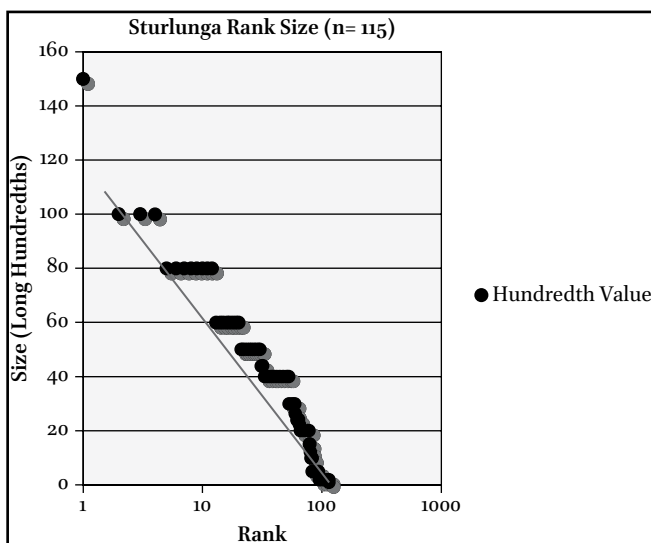


FIGURE 66 Rank-size plot for farmstead sites for the Sturlunga period

the beginning of greater political integration administered by a governmental center.⁶² In early state societies, primate centers typically correspond to a capital or a palace center; in Skagafjörður, the primate center was the Hólar Bishopric (established in 1106 A.D.). Following other Scandinavian societies, Catholicism was adopted in Iceland by the start of the 11th century. Along with this new ideology came a new approach for facilitating the political economy through implementing an ecclesiastical-based organization onto the profane social landscape. Through this organization, the lands attached to households were tied to the church, easing the process for elites to collect taxes and allowing them to use churches as central places or hubs for the collection and exchange of goods. This structure, similar to what has been documented not only in Scandinavia but throughout western Europe,⁶³ provided safe havens for exchange and legitimization for elite power. In Iceland, this focus on elite power and ideology is reflected in the development of parish churches on all but three type 1, large farmsteads (see also Chapter 6). It likewise resulted in new space-of-flows media for Iceland: *staðir* and *bændakirkja*. *Staðir*, or benefice farms, were owned outright by the Church, while *bændakirkja*, or parish churches, were privately owned by aristocrats but with full recognition

62 Johnson (1980).

63 Andrén (1989); Moore (2000).

as legitimate sacred places by the Catholic Church.⁶⁴ These sacred places became centers of common ground, acting as points along the landscape where interaction and exchange could be safely facilitated – in other words, an ideal space-of-flows medium. It was through these new space-of-flows mediums that greater economic exchange, local as well as international, could be carried out. If, however, the economy had never shifted its focus to wool production, it is unlikely that these structural shifts would have been implemented and/or successful.

The demands of local and foreign markets were met through a reorganization of the landscape (see Chapters 5 and 6) that was regulated by ecclesiastical laws. The culmination of this reorganization is documented by the increase in the number of mid-sized (type 3) and small (type 4) farmsteads. Interestingly, unlike the previous periods, smaller sites are not only greater in number but are also well integrated with larger sites (see Figure 66), indicating greater control and political integration. Unlike previous periods shaped by a Viking Age economy, control over the labor of small households would have been crucial to the economic success of elites whose power base was defined by agrarian production.⁶⁵ An emphasis on land and sheep perhaps explains why urbanism did not develop in Iceland, but as with Scandinavia, the fact that cities did not develop in medieval Iceland should not dissuade us from suggesting that local and long-distance communication and exchange both played a role in the development of state institutions. On the contrary, the data presented here demonstrate how a network of a few hubs can connect entire regions, easily carrying out the economic demands of a true state-level society.

Trading activities in Iceland not only connected local farmsteads, but also kept Iceland linked to the world beyond its horizon. The synergy of local and global factors is what ultimately created a landscape poised for state-level organization by the end of the 13th century. Ultimately, Iceland relinquished its political autonomy in 1262 A.D., and would remain a colony of varying Scandinavian kingdoms until the 20th century. While the characteristics of its state formation share several commonalities with other societies throughout Scandinavia and western Europe, the Icelandic state represents a distinctive form of secondary state: one that combines centuries of local development with centuries of interaction with neighboring mature states. Rather than reflecting the political structures of Europe, Iceland maintained its agropastoral economy governed through the offices of the Church rather than through a king or a governor. Even after Iceland's annexation as a colony to the

64 Eyþórsson (2005, 37); Þorláksson (2005, 129).

65 Durrenberger (1989, 1990a); Vésteinsson (2005a).

Norwegian Crown, Icelandic society can at most be described as a reluctant subject; Iceland continued to be ruled by local aristocrats backed through the power of the Church rather than through the authority of a Norway-based administrator. The political integration of the society after 1300 A.D. is punctuated by the tension between achieving complete integration and preserving its local autonomy (see Figures 67 and 68). Hólar remained a ‘primate center’ long

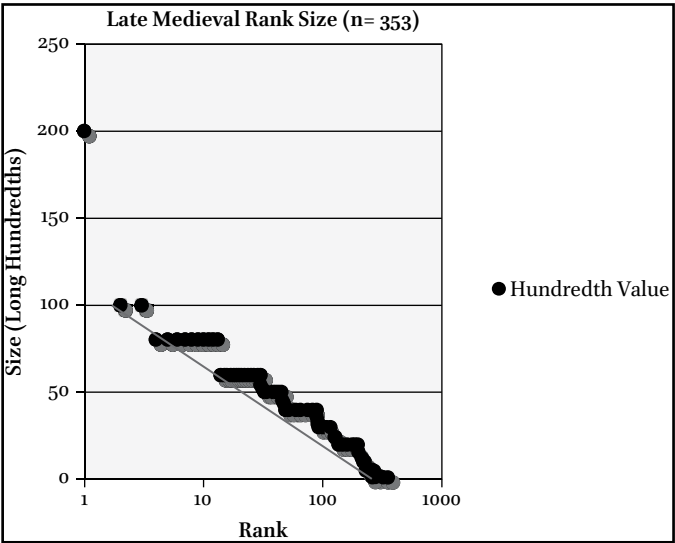


FIGURE 67 Rank-size plot for farmstead sites for the Late Medieval period

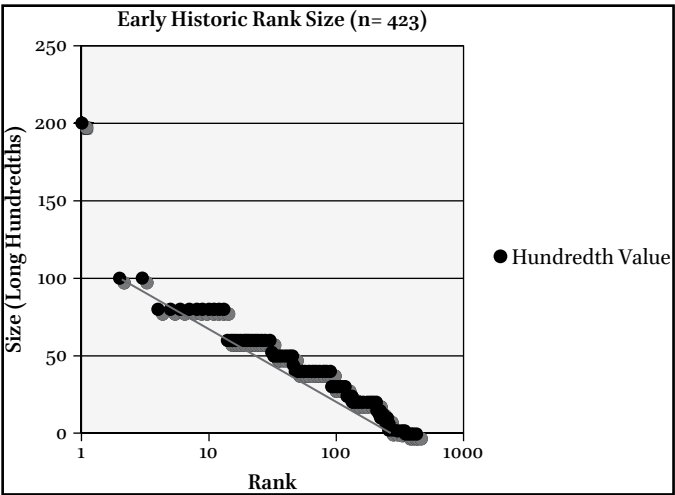


FIGURE 68 Rank-size plot for farmstead sites for the Early Historic period

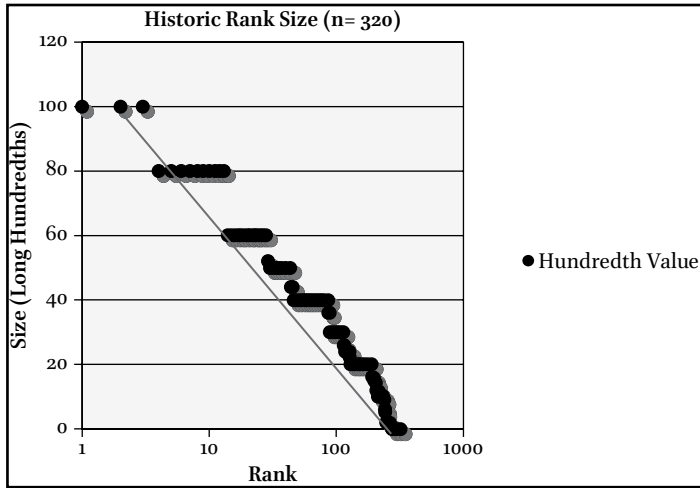


FIGURE 69 Rank-size plot for farmstead sites for the Historic period

after allegiance was sworn to a distant monarchy, with the local, Icelandic-born bishops preserving their authority and wealth. It is not until the early 19th century, as Icelanders are rallying for political independence, that sites in Skagafjörður achieve complete political integration (see figure 69).

The Icelandic case study aptly demonstrates that there are multiple paths to statehood and potentially multiple different types of secondary states. Trait lists, while helpful, should not keep us from considering the possibility that states can exist without extensive urbanism or without monumental architecture. The key to understanding social change is to understand the relationships among variables and within different scales of analysis.

7.6 Rethinking State Formation in Iceland

The aim of my archaeological research in Skagafjörður, Iceland has been to address the processes of secondary state formation. I have argued that the evolution of secondary states – while a phenomenon far more common than the development of primary states – has frequently been overlooked by historians and archaeologists who tend prefer the study of primary state development to their derivative cousins. Researchers have likewise viewed the process of secondary state formation as either entirely the same as that of primary states or as a byproduct of existing states encroaching on their less politically complex neighbors. For Iceland, this theoretical narrowness has been played out as a debate between archaeologists, who have turned to environmental models to

explain state development as an insular process, and historians, who have turned to the sagas as proof of Norway's colonial dominance over its peripheral outpost in the North Atlantic. At the beginning of this book I suggested that these two diametrically opposed views were a manifestation of the 'Two Cultures' debate⁶⁶ between the fields of archaeology and history, each armed with their own proprietary dataset. I have argued throughout my research that this division should not be considered mutually exclusive, but rather that each dataset represents two unique perspectives on the past that can in fact be integrated. I have also shown that these two views on Iceland's path to statehood represent methodological limitations on the study of secondary state formation in general and on the perceived limitations to archaeological and textual evidence from Iceland specifically. The case study from Skagafjörður, however, demonstrates new theoretical and methodological avenues of research for projects that aim to integrate textual and archaeological datasets by positioning the evidence within a broader social and geographical perspective. This perspective is made possible through an analysis of landscape evolution as a product of local as well as external forces. Most studies on social complexity in Iceland have tended to view farmstead sites mentioned in texts or documented in the material record in isolation rather than as part of a larger inter-regional system, noting the methodological difficulties of situating highly localized data into a broader social world. Social network models, however, make it possible to examine the complex interaction among farmsteads, and among regions in locations such as Skagafjörður, by identifying what type of system-structure organizes the landscape. This identification reveals new trends and new variables for further examination. In my own research, these new variables indicated a landscape organization that was highly connected through a network of well-positioned hubs. As a connected system, a single farmstead was able to produce goods well beyond its own subsistence needs, suggesting that Iceland played a role in a larger, global commercial economy.

From these new data I have argued that local and international trade, supported by a social structure and consistently productive environment, led to the formation of secondary state-level institutions in Iceland. Under the parameters defined in the synergistic secondary state model, I have shown how social change must be viewed within both micro- and macro-level scales of analysis. I have also shown how activities such as trade can facilitate interplay between local and external stimuli, producing a high level of connectivity that can ignite social change. These social changes, however, must be supported by an infrastructure able to manage these new social arrangements

66 Snow (1959).

as well as by an environment capable of keeping up with new economic and political demands. My analysis of landscape organization and economic change over time in Iceland likewise demonstrates that the quest to find a single primary factor in the development of social complexity is misleading: there are no isolated prime movers of societal change as the social structures are positioned within a continual feedback system that is modified not only as new factors are introduced, but also as the relationships among existing variables change. This observation suggests that researchers must reconsider traditional models of secondary state formation as driven by natural crises or as imposed by dominant groups, as even in island or frontier situations the relationships between and within societies are highly dynamic.

Bibliography

- Abu-Lughod, Janet. 1991. *Before European Hegemony: The World System A.D. 1250–1350*. Oxford: Oxford University Press.
- Aðalsteinsson, Jón Hnefill. 1999. *Under the Cloak: A Pagan Ritual Turning Point in the Conversion of Iceland*. 2nd ed. Reykjavík: University of Iceland Press.
- Aðalsteinsson, Stefán. 1991. "Importance of Sheep in Early Icelandic Agriculture." *Acta Archaeologica* 61: 285–91.
- Adams, Richard N. 1988. *The Eighth Day: Social Evolution as the Self-organization of Energy*. Austin: University of Texas Press.
- Adams, Robert McCormick. 1996. *Paths of Fire: An Anthropologist's Inquiry into Western Technology*. Princeton: Princeton University Press.
- Alcock, Susan. 2002. *Archaeologies of the Greek Past: Landscape, Monuments, and Memories*. Cambridge, Eng.: Cambridge University Press.
- Aldred, Oscar. 2006. "Réttir in the Landscape: A Study on the Context of Focal Points." In *Dynamics of Northern Societies*. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, May 10–14, 2004, edited by Jette Arneborg and Bjarne Grønnow, pp. 355–64. Copenhagen: National Museum Studies in Archaeology and History.
- Algaze, Guillermo. 1989. "The Uruk Expansion." *Current Anthropology* 30, no. 5: 571–608.
- . 1993. "Expansionary Dynamics of Some Early Pristine States." *American Anthropologist* 95, no. 2: 304–33.
- . 2005. *The Uruk World System: The Dynamics of Expansion of Early Mesopotamian Civilization*. Chicago: University of Chicago Press.
- Amorosi, Thomas. 1989. "Contributions to the Zooarchaeology of Iceland: Some Preliminary Notes." In *The Anthropology of Iceland*, edited by E. Paul Durrenberger and Gísli Pálsson, pp. 203–27. Iowa City: University of Iowa Press.
- . 1990. "Icelandic Archaeofauna: A Preliminary Report." *Acta Archaeologica* 61: 272–84.
- . 1992. "Climate Impact and Human Response in Northeast Iceland: Archaeological Investigations at Svalbarð, 1986–1988." In *Norse and Later Settlement and Subsistence in the North Atlantic*, edited by Christopher Morris and D. James Rackham, pp. 103–38. Glasgow: University of Glasgow Press.
- Amorosi, Thomas, Paul Buckland, Andrew Dugmore, Jon Ingimundarson, and Thomas McGovern. 1997. "Raiding the Landscape: Human Impact in Scandinavian North Atlantic." *Human Ecology* 25, no. 3: 491–518.
- Amorosi, Thomas and Thomas H. McGovern. 1989. *Svalbarð Archaeofauna: Archaeological Investigations at Svalbarð 6706–60, Northeast Iceland, 1987–88, a Preliminary Report*. Department of Anthropology, Hunter College of CUNY.

- . 1994. "Appendix 4: A Preliminary Report of an Archaeofauna from Granastaðir, Eyjafjardarsla, Northern Iceland." In *The Settlement of Iceland: A Critical Approach. Granastaðir and the Ecological Heritage*, edited by Bjarni Einarsson, pp. 181–94. Gothenburg Archaeological Theses Series B, no. 4. Gothenburg: Gothenburg University.
- Amundsen, Colin P. 2004. "Farming and Maritime Resources in Miðbær on Flatey in Breiðafjörður, NW Iceland." In *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, edited by R.A. Housley and G. Coles, pp. 1203–10. Symposia of the Association for Environmental Archaeology, no. 21. Oxford: Oxbow Books.
- Anderson, Benedict. 1991. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.
- Anderson, Theodore and William Ian Miller. 1989. *Law and Literature in Medieval Iceland: Ljósvetninga Saga and Valla-Ljóts Saga*. Stanford: Stanford University Press.
- Ando, Clifford. 2000. *Imperial Ideology and Provincial Loyalty in the Roman Empire*. Berkeley: University of California Press.
- Andrén, Anders. 1989. "State and Towns in the Middle Ages." *Theory and Society* 18: 585–609.
- Ankersmit, F. 1989. "Historiography and Postmodernism." *History and Theory* 28: 137–53.
- Anthony, David W. 1990. "Migration in Archaeology: The Baby and the Bathwater." *American Anthropologist* 92: 895–909.
- Arnalds, Ólafur. 1999. "Soil Survey and Databases in Iceland." *European Soil Bureau Research Reports* no. 6: 91–7.
- . 2000. "The Icelandic Rofabard Soil Erosion Features." *Earth Surface Processes and Landforms* 25: 17–28.
- . 2004. "Volcanic Soils of Iceland." *Catena* 56: 3–20.
- Arnalds, Óladur, Asa L. Aradóttir, and Ingvi Thorsteinsson. 1987. "The Nature of Restoration of Denuded Areas in Iceland." *Arctic and Alpine Research* 19, no. 4: 518–25.
- Arnalds, O., C.T. Hallmark, and L.P. Wilding. 1995. "Andosols from Four Different Regions of Iceland." *Soil Science Society of America Journal* 59: 161–9.
- Arnold, Jeanne E. 1995. "Social Inequality, Marginalization, and Economic Process." In *Foundations of Social Inequality*, edited by T.D. Price and G.M. Feinman, pp. 87–103. New York: Plenum.
- Ashby, Steven. 2006. "Trade in Viking Age Britain: Identity and the Production and Distribution of Bone and Antler Combs." In *Dynamics of Northern Societies*, edited by Jette Arneborg and Bjarne Grønnow, pp. 273–80. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, 10–14 May 2004. Copenhagen: National Museum Studies in Archaeology and History.
- Ashurt, David. 1997. "Kolum Vér Pann Sælan, Er Sjálfan Sik Hefir Fyrir Kongung: Alexander's Saga and the Norwegian Crown." In *Sagas and the Norwegian Experience*,

- edited by J.R. Hagland, pp. 22–32. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstuder, Norwegian University of Science and Technology.
- Bachrach, Bernard and David Nicholas. 1989. *Law, Custom, and the Social Fabric in Medieval Europe*. Kalamazoo: Western Michigan University.
- Bagge, Sverre. 1992. "From Sagas to Society: The Case of Heimskringla." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 61–75. Enfield Lock: Hisarlik Press.
- Baines, John and Norman Yoffee. 1998. "Order, Legitimacy, and Wealth in Ancient Egypt and Mesopotamia." In *Archaic States*, edited by G. Feinman and J. Marcus, pp. 199–260. Santa Fe: School of American Research.
- Baldursdóttir, Brynhildur. 2009. "Voyages of Profit? The Social Impact and the Importance of Trade between Iceland, Greenland and Norway in 1000–1500 A.D." Master's thesis, Department of Archaeology and Religious Studies, Norwegian University of Science and Technology, Trondheim.
- Barabási, Albert-László. 2003. *Linked: How Everything is Connected to Everything Else and What it Means for Business, Science, and Everyday Life*. London: Penguin.
- Batey, Colleen. 2005. "From Raw Material to Finished Product: Resources and Resourcefulness in the North Atlantic." In *From Hooves to Horns, from Mollusc to Mammoth*, edited by H. Luik, Alice Choyke, Collen Batey, and L. Lõugas, pp. 351–8. Tallinn: University of Tartu.
- Bauer, Egil Marstein and Ragnheiður Traustadóttir. 2008. *Excavation area E Hólum í Hjaltadal*. Rannsóknarskýrslur Hólarannsóknin 2008. Háskólinn á Hólum. Directed by Ragnheiður Traustadóttir.
- Bender, Barbara. 2002. "Time and Landscape." *Current Anthropology* 43: 103–12.
- . 2006. "Place and Landscape." In *Handbook of Material Culture*, edited by Christopher Tilley, W. Keane, S. Kuechler-Fogden, Michael Rowlands, and P. Spyer, pp. 303–14. London: Sage Publications.
- Bergesen, Albert J. and Tim Bartley. 2000. "World-System and Ecology." In *A World-Systems Reader: New Perspectives on Gender, Urbanism, Cultures, Indigenous Peoples, and Ecology*, edited by Thomas D. Hall, pp. 307–22. Lanham: Rowman and Littlefield.
- Berghthórsson, Páll. 1985. "Sensitivity of Icelandic Agriculture to Climatic Variations." *Climate Change* 7, no. 1: 111–28.
- . 1988a. Introduction to *The Impact of Climatic Variations on Agriculture, vol. 1, Assessment in Cool Temperate and Cold Regions*, edited by M.L. Parry, T.R. Carter, and N.T. Konijn, pp. 389–413. Dordrecht: Kluwer.
- . 1988b. "The Effects on Agricultural Potential." In *The Impact of Climatic Variations on Agriculture, vol. 1, Assessment in Cool Temperate and Cold Regions*, edited by M.L. Parry, T.R. Carter, and N.T. Konijn, pp. 415–44. Dordrecht: Kluwer.

- . 2000. "The Effect of Climatic Variations on Farming in Iceland." In *Aspects of Arctic and Sub-Arctic History*, edited by Ingi Sigurðsson and Jón Skaptason, pp. 264–9. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.
- Biskupa sögur*. 2003. Íslensk fornrit XV. Edited by Sigurgeir Steingrímsson, Ólafur Halldórsson, and Peter Foote. Reykjavík: Hið íslenska fornritafélag.
- Björnsson, Helgi. 1988. "Hydrology of Ice Caps in Volcanic Regions." *Societas Scientiarum Islandica* 45: 139.
- Blanton, Richard, Gary Feinman, Stephen Kowalewski, and Peter Peregrine. 1996. "Dual-Processual Theory for the Evolution of Mesoamerican Civilization." *Current Anthropology* 37, no. 1: 1–14.
- Bolender, Douglas James. 2006. "The Creation of a Propertied Landscape: Land Tenure and Agricultural Investment in Medieval Iceland." PhD diss., Department of Anthropology, Northwestern University.
- Bolender, Douglas J., John M. Steinberg and E. Paul Durrenberger. 2008. "Unsettled Landscapes: Settlement Patterns and the Development of Social Inequality in Northern Iceland." In *Economies and the Transformation of Landscape*, edited by Lisa Cliggett and Christopher A. Pool, pp. 217–38. Lanham: Altamira Press.
- Bolin, Sture. 1952. "Mohammed, Charlemagne and Ruric." *Scandinavian Economic History* 1: 5–39.
- Boulhosa, Patricia P. 2005. *Icelanders and the Kings of Norway: Medieval Sagas and Legal Texts*. The Northern World, vol. 17. Leiden: Brill.
- Braudel, Fernand. 1995. "History and Social Sciences: The *Longue Durée*." In *Histories: French Constructions of the Past*, edited by Jacques Ravel and Lynn Hunt, pp. 115–46. New York: New Press.
- Brown, A.G. 1997. *Alluvial Geoarchaeology: Floodplain Archaeology and Environmental Change*. Cambridge, Eng.: Cambridge University Press.
- Brumfiel, Elizabeth. 2003. "It's a Material World: History, Artifacts, and Anthropology." *Annual Review of Anthropology* 32: 205–23.
- Buchanan, Mark. 2002. *Nexus: Small Worlds and the Groundbreaking Science of Networks*. New York: W.W. Norton.
- Buckland, Paul C. 2000. "The North Atlantic Environment." In *Vikings: The North Atlantic Saga*, edited by W. Fitzhugh and E. Ward, pp. 146–53. Washington, D.C.: Smithsonian Institution Scholarly Press.
- Buckland, P., A. Dugmore, D. Perry, D. Savory, and G. Sveinbjarnardóttir. 1990. "Holt in Eyjafjallasveit, Iceland: A Paleoeological Study of the Impact of Landnám." *Acta Archaeologica* 61: 252–71.
- Buol, S.W., F.D. Hole, and R.J. McCracken. 1980. *Soil Genesis and Classification*. Ames: Iowa State University Press.

- Butzer, Karl. 1990. "A Human Ecosystem Framework for Archaeology." In *The Ecosystem Approach in Anthropology: From Concept to Practice*, edited by Emilio Moran, pp. 91–130. Ann Arbor: University of Michigan Press.
- Byock, Jesse. 1982. *Feud in the Icelandic Saga*. Berkeley: University of California Press.
- . 1988. *Medieval Iceland*. Berkeley: University of California Press.
- . 1992. "History and the Sagas: The Effect of Nationalism." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 43–59. Enfield Lock: Hisarlik Press.
- . 2001. *Viking Age Iceland*. London: Penguin.
- Carlie, Anne. 2008. "Magnate Estates along the Road: Viking Age Settlements, Communication and Contacts in South-West Scania, Sweden." *Acta Archaeologica* 79: 110–44.
- Carr, Christopher. 1991. "Left in the Dust: Contextual Information in Model-Focused Archaeology." In *The Interpretation of Archaeological Spatial Patterning*, edited by Ellen M. Kroll and T. Douglas Price, pp. 221–56. New York: Plenum.
- Carter, Tara D. 2003. "Land Productivity and Social Collapse in Medieval Iceland." Master's thesis, Department of Anthropology, California State University, Northridge.
- . 2010. *Rethinking Secondary State Formation in Medieval Iceland: Trade and Social Connectivity in the Norse Economic Territory*. PhD Diss., La Jolla: Department of Anthropology, University of California, San Diego.
- Carter, Tara D. and Thomas E. Levy. 2010. "Texts in Exile: Towards an Anthropological Methodology for Incorporating Texts and Archaeology." In *Historical Biblical Archaeology and the Future: The New Pragmatism*, edited by Thomas E. Levy, pp. 205–40. London: Equinox.
- Caseldine, Chris, Mark Dinnin, Dawn Hendon, and Pete Langdon. 2004. "The Holocene Development of the Icelandic Biota and Its Palaeoclimatic Significance." In *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, edited by R.A. Housley and G. Coles, pp. 182–90. Symposia of the Association for Environmental Archaeology No. 21. Oxford: Oxbow Books.
- Cashman, Jenny. 2006. "Foreign Self and Familiar Other: The Impact of the 'Global' Connectivity on New Kingdom Egypt." In *Connectivity in Antiquity: Globalization as Long-Term Historical Process*, edited by Øystein S. LaBianca and Sandra Arnold Scham, pp. 139–57. London: Equinox.
- Castells, M. 1996. *The Information Age: Economy, Society and Culture, vol. 1, The Rise of the Network Society*. Oxford: Blackwell.
- . 1997. *The Information Age. Economy, Society and Culture, vol. 2, The Power of Identity*. Oxford: Blackwell.
- . 1998. *The Information Age: Economy, Society and Culture, vol. 3, End of Millennium*. Oxford: Blackwell.

- Chase-Dunn, C. and T.T. Hall. 1997. *Rise and Demise: Comparing World-Systems*. Boulder: Westview Press.
- Childe, V. Gordon. 1951 [1936]. *Man Makes Himself*. London: Watts Press.
- . 1942. *What Happened in History?* Baltimore: Penguin Press.
- . 1951. *Social Evolution*. London: Watts Press.
- Christiansen, Eric. 2002. *The Norsemen in the Viking Age*. Oxford: Blackwell.
- Christophersen, Axel. 1999. "The Waterfront and Beyond: Commercial Activity and Making of Townscapes." In *Maritime Topography and the Medieval Town*, edited by Jan Bill and Birthe Clausen, pp. 161–8. Studies in Archaeology and History, no. 4. Copenhagen: National Museum of Denmark.
- Christophersen, A. and S.W. Nordeide. 1994. *Kaupangen ved Nidelva: 1000 års byhistorie belyst gjennom de arkeologiske undersøkelsene på folkebibliotekstomten i Trondheim 1973–1985*. Oslo: Riksantikvaren.
- Clark, Herbert. 1996. *Using Language*. Cambridge, Eng.: Cambridge University Press.
- Clements, Jonathan. 2005. *The Vikings: The Last Pagans or the First Modern Europeans?* London: Robinson Press.
- Clifford, James. 1997. *Routes: Travel and Translation in the Late Twentieth Century*. Cambridge, Mass.: Harvard University Press.
- Clover, Carol. 1982. *The Medieval Saga*. Ithaca: Cornell University Press.
- . 1985. "Icelandic Family Sagas (Íslendingasögur)." In *Old Norse-Icelandic Literature: A Critical Guide*, edited by Carol Clover and John Lindow, pp. 239–315. Ithaca: Cornell University Press.
- Clover, Carol and John Lindow, eds. 1985. *Old Norse-Icelandic Literature: A Critical Guide*. Ithaca: Cornell University Press.
- Cohen, Abner. 1971. "Cultural Strategies in the Organization of Trading Diasporas." In *The Development of Indigenous Trade and Markets in West Africa*, edited by C. Meillassoux, pp. 266–81. London: Oxford University Press.
- Cohen, Ronald. 1981. "Evolution, Fission, and the Early State." In *The Study of the State*, edited by Henri Claessen and Peter Skalník, pp. 87–116. Hague: Mouton Publishers.
- Cohen, Ronald and Elman Service. 1978. *Origins of the State: The Anthropology of Political Evolution*. Philadelphia: Institute for the Study of Human Issues.
- Cook, Robert. 1997. "Journeys to Norway and Other Foreign Parts in Njáls Saga." In *Sagas and the Norwegian Experience*, edited by J.R. Hagland, pp. 130–8. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstudier, Norwegian University of Science and Technology.
- Costin, Cathy Lynne. 2001. "Craft Production Systems." In *Archaeology at the Millennium: A Sourcebook*, edited by Feinman and Price, pp. 273–328. New York: Kluwer.
- Coupland, Simon. 2007. *Carolingian Coinage and the Vikings: Studies on Power and Trade in the 9th Century*. Hampshire: Ashgate.

- Crabtree, Pam. 1996. "The Wool Trade and the Rise of Urbanism in Middle Saxon England," In *Craft Specialization and Social Evolution: In Memory of V. Gordon Childe*, edited by Bernard Wailes, pp. 99–105. Philadelphia: University of Pennsylvania.
- Crumley, Carole. 1995. "Heterarchy and the Analysis of Complex Societies." In *Heterarchy and the Analysis of Complex Societies*, edited by Robert Ehrenreich, Carole Crumley, and Janet Levy, pp. 1–6. Washington, D.C.: American Anthropological Association.
- Crumlin-Pedersen, Ole. 1991. *Aspects of Maritime Scandinavia: A.D. 200–1200*. Proceedings of the Nordic Seminar on Maritime Aspects of Archaeology, Roskilde, 13–15 March, 1989. Roskilde: The Viking Ship Museum Press.
- . 1999. "Ships as Indicators of Trade in Northern Europe, 600–1200." In *Maritime Topography and the Medieval Town*, edited by Jan Bill and Birthe Clausen, pp. 11–20. Studies in Archaeology and History, no. 4. Copenhagen: National Museum of Denmark.
- Curtain, Philip. 1984. *Cross-Cultural Trade in World History*. Cambridge, Eng.: Cambridge University Press.
- Dahl-Jensen, D., K. Mosegaard, N. Gundestrup, G.D. Clow, S.J. Johnsen, A.W. Hansen, and N. Balling. 1998. "Past Temperatures Directly from the Greenland Ice Sheet." *Science* 282: 268–71.
- D'Altroy, Terrence. 1992. *Provincial Power in the Inka Empire*. Washington, D.C.: Smithsonian Institution Scholarly Press.
- Damsholt, Nanna. 1984. "The Role of Icelandic Women in the Sagas and in the Role of the Production of Homespun Cloth." *Scandinavian Journal of History* 9, no. 2: 75–90.
- Dansgaard, W. 1964. "Stable Isotopes in Precipitation." *Tellus* 16: 436–8.
- Dennis, Andrew, Peter Foote, and Richard Perkins. 1980. "Introduction." In *The Codex Regius of Grágás: Laws of Early Iceland*, vols. 1 and 2, translated by Andrew Dennis, Peter Foote, and Richard Perkins, pp. vii–xii. Winnipeg: University of Manitoba Press.
- Derrida, Jacques. 1973. *Speech and Phenomena and Other Essays on Husserl's Theory of Signs*. Translated by David Allison. Evanston: Northwestern University Press.
- Dietler, Michael. 1996. "Feasts and Commensal Politics in the Political Economy: Food, Power and Status in Prehistoric Europe." In *Food and the Status Quest: An Interdisciplinary Perspective*, edited by P. Wiessner and W. Schienföhövel, pp. 87–126. Providence: Berghahn Books.
- Diplomatariu Islandicum*. 1853–76. Íslenzkt fornbréfasafn. Copenhagen.
- Dobres, Marcia-Anne. 2000. *Technology and Social Agency: Outlining a Practice Framework for Archaeology*. Oxford: Blackwell.
- Dugmore, Andrew and Paul Buckland. 1991. "Tephrochronology and Late Holocene Soil Erosion in South Iceland." In *Environmental Change in Iceland: Past and Present*, edited by J.K. Maizels and C. Caseldine, pp. 147–60. Dordrecht: Kluwer.

- Dugmore, Andrew, Mike J. Church, Kerry-Anne Mairs, Tom McGovern, Anthony J. Newton, and Guðrún Sveinbjarnardóttir. 2006. "An Over-Optimistic Pioneer Fringe? Environmental Perspectives on Medieval Settlement Abandonment in Þórsmörk, South Iceland." In *Dynamics of Northern Societies*, edited by Jette Arneborg and Bjarne Grønnow, pp. 335–46. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, 10–14 May 2004. Copenhagen: National Museum Studies in Archaeology and History.
- Dugmore, Andrew J., Mike J. Church, Kerry-Anne Mairs, Thomas H. McGovern, Sophia Perdikaris, and Orri Vésteinsson. 2007. "Abandoned Farms, Volcanic Impacts, and Woodland Management: Revisiting Þjórsárdalur, the 'Pompeii of Iceland'." *Arctic Anthropology* 44, no. 1: 1–11.
- Dugmore, Andrew J., Guðrún Gísladóttir, Ian A. Simpson, and Anthony Newton. 2009. "Conceptual Models of 1200 Years of Icelandic Soil Erosion Reconstructed Using Tephrochronology." *Journal of the North Atlantic* 2: 1–18.
- Durrenberger, E. Paul. 1988. "Stratification without a State: The Collapse of the Icelandic Commonwealth." *Ethnos* 53: 239–65.
- . 1989. "Anthropological Perspectives on the Commonwealth Period." In *The Anthropology of Iceland*, edited by E. Paul Durrenberger and Gísli Pálsson, pp. 228–46. Iowa City: University of Iowa Press.
- . 1990a. "Production in Medieval Iceland." *Acta Archaeologica* 61: 14–21.
- . 1990b. "Text and Transaction in Commonwealth Iceland." *Ethnos* 55: 74–91.
- . 1992. *The Dynamics of Medieval Iceland*. Iowa City: University of Iowa Press.
- . 1998. "Property, State, and Self-destruction in Medieval Iceland." In *Property in Economic Context*, edited by Robert Hunt and Antonio Gilman, pp. 171–86. Lanham: University Press of America.
- Earle, Timothy. 1978. *Economic and Social Organization of a Complex Chieftdom: The Halelea District, Kaua'i, Hawaii*. Ann Arbor: University of Michigan, Museum of Anthropology.
- . 1997. *How Chiefs Come to Power: The Political Economy in Prehistory*. Stanford: Stanford University Press.
- . 2002. *Bronze Age Economics: The Beginnings of Political Economies*. Boulder: Westview Press.
- Edvardsson, Ragnar. 2005. "Commercial and Subsistence Farming in Vestfirðir: A Study in the Role of Fishing in the Icelandic Medieval Economy." *Archaeologica Islandica* 4: 51–67.
- Edwards, Kevin J., Paul C. Buckland, Andrew J. Dugmore, Thomas M. McGovern, Ian A. Simpson, and Guðrún Sveinbjarnardóttir. 2004. "Landscapes Circum-Landnám: Viking Settlements in the North Atlantic and Its Human and Ecological Consequences." In *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, edited by R.A. Housley and

- G. Coles, pp. 260–71. Symposia of the Association for Environmental Archaeology, no. 21. Oxford: Oxbow Books.
- Eggertsson, Thráinn. 1992. "Analyzing Institutional Successes and Failures: A Millennium of Common Mountain Pastures in Iceland." *International Review of Law and Economics* 12: 423–37.
- . 1998. "Sources of Risk, Institutions for Survival, and a Game against Nature in Premodern Iceland." *Explorations in Economic History* 35: 1–30.
- Egils saga*. 1976. Translated by Hermann Pálsson and Paul Edwards. London: Penguin.
- Einarsson, Bjarni. 1994. *The Settlement of Iceland: A Critical Approach*. Granastaðir and the Ecological Heritage, Gotarc, Series B. Gothenburg: Department of Anthropology, Gothenburg University.
- Ekholm, Kaja and Jonathan Friedman. 1979. "Capital, Imperialism and Exploitation in Ancient World Systems." In *Power and Propaganda: A Symposium on Ancient Empires*, edited by Mogens Trolle Larsen, pp. 41–58. Copenhagen: Akademisk Forlag.
- Eldjárn, Kristján and Adolf Friðriksson. 2000. *Kuml og haugfé úr heiðnum sið á Íslandi*. Reykjavík: Mál og Menning.
- Elias, Norbert. 1978. *The Civilizing Process: The History of Manners*. Translated by Edmund Jephcott. Oxford: Blackwell.
- Espelund, Arne. 1991. "Bog Iron Ore for the Bloomery Process." In *Bloomery Ironmaking During 2000 Years: In Honor of Ole Evenstad, vol. 1, Ancient Ironmaking in a Local and General Norwegian Context*, edited by Arne Espelund, pp. 36–49. Trondheim: Comité pour la sidérurgie ancienne de l'UISPP.
- Eybyggja saga*. 1935. Edited by Einar Sveinsson and Matthias Þórðarson. Reykjavík: Íslenska forritafélag.
- Eybyggja saga (The Saga of the Ere-Dwellers)*. 1989. Translated by Hermann Pálsson and Paul Edwards. London: Penguin.
- Eyþórsson, Benedikt. 2005. "History of the Icelandic Church 1000–1300: Status of Research." In *Church Centres: Church Centres in Iceland from the 11th to the 13th Century and their Parallels in Other Countries*, edited by Helgi Þorláksson, pp. 19–69. Reykholt: Snorrastofa, Cultural and Medieval Centre.
- Feinman, Gary. 2000. "Dual-Processual Theory and Social Formations in the Southwest." In *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by Barbara Mills, pp. 207–24. Tucson: University of Arizona Press.
- Finlay, Alison. 1997. "Kings and Icelanders in Poet's Sagas and þættir." In *Sagas and the Norwegian Experience*, edited by J.R. Hagland, pp. 159–68. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstudier, Norwegian University of Science and Technology.
- Flannery, Kent. 1998. "The Ground Plan of Archaic States." In *Archaic States*, edited by Gary Fienman and Joyce Marcus, pp. 15–57. Santa Fe: School of American Research Press.

- . 1999. "Process and Agency in Early State Formation." *Cambridge Archaeological Journal* 9, no. 1: 3–21.
- Fletcher, Roland. 1995. *The Limits of Settlement Growth: A Theoretical Outline*. Cambridge, Eng.: Cambridge University Press.
- Forté, Angelo, Richard Oram, and Frederik Pedersen. 2005. *Viking Empires*. Cambridge, Eng.: Cambridge University Press.
- Foucault, Michel. 1977. *Discipline and Punish: The Birth of the Prison*. Translated by Alan Sheridan. New York: Pantheon.
- . 1978. *The History of Sexuality*. Translated by Robert Hurley. New York: Pantheon.
- Frank, Roberta. 1973. "Marriage in Twelfth- and Thirteenth-Century Iceland." *viator* 4: 473–84.
- Freeman, Linton C. 2004. *The Development of Social Network Analysis: A Study in the Sociology of Science*. North Charleston: BookSurge.
- French, Charles. 2003. *Geoarchaeology in Action: Studies in Soil Micromorphology and Landscape Evolution*. London: Routledge.
- Friðriksson, Sturla. 1972. "Grass and Grass Utilization in Iceland." *Ecology* 53, no. 5: 785–96.
- Friðriksson, Adolf. 1994. *Sagas and Popular Antiquarianism in Icelandic Archaeology*. Avebury: Ashgate Publishing.
- Friðriksson, Thorbjörn Á. and Margrét Hermanns-Audardóttir. 1992. "Ironmaking in Iceland." In *Bloomery Ironmaking during 2000 Years: In Honor of Ole Evenstad, vol. 2, Iron in the West Nordic Region during the Middle Ages*, edited by Arne Espelund, pp. 5–15. Trondheim: Comité pour la sidérurgie ancienne de l'UISPP.
- Friðriksson, Adolf and Orri Vésteinsson. 2003. "Creating a Past: A Historiography of the Settlement of Iceland." In *Contact, Continuity, and Collapse: The Norse Colonization of the North Atlantic*, edited by James Barrett, pp. 139–61. Turnhout: Brepols.
- Friðriksson, Adolf, Orri Vésteinsson, and Thomas McGovern. 2004. "Recent Investigations at Hofstaðir, Northern Iceland." In *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, edited by R.A. Housley and G. Coles, pp. 191–202. Symposia of the Association for Environmental Archaeology, no. 21. Oxford: Oxbow Books.
- Fried, Morton. 1960. "On the Evolution of Social Stratification and the States." In *Culture in History*, edited by S. Diamond, pp. 713–31. New York: Columbia University Press.
- . 1967. *The Evolution of Political Society*. New York: Random House.
- . 1978. "The Chicken and the Egg; Or, What Came First?" In *Origins of the State*, edited by Ronald Cohen and Elman Service, pp. 35–48. Philadelphia: Institute for Study of Human Issues.
- Friedman, Jonathan. 1985. "Captain Cook, Culture, and the World System." *The Journal of Pacific History* 20, no. 4: 191–201.

- Gaborit-Chopin, Danielle. 1992. "Walrus Ivory in Western Europe." In *From Viking to Crusader: Scandinavia and Europe 800–1200*, edited by Else Rosedahl and D. Wilson, pp. 204–5. Uddevalla: Bohusläningens Boktryckeri.
- Garrison, Ervan. 2003. *Techniques in Archaeological Geology*. Berlin: Springer.
- Gaskins, Richard. 1998. "Visions of Sovereignty in Snorri Sturlusson's *Heimskringla*." *Scandinavian Journal of History* 23, nos. 3–4: 173–88.
- Gelsinger, Bruce E. 1981. *Icelandic Enterprise: Commerce and Economy in the Middle Ages*. Columbia: University of South Carolina Press.
- Gilman, Antonio. 1981. "The Development of Social Stratification in Bronze Age Europe." *Current Anthropology* 22, no. 1: 1–23.
- Gísla saga Súrssonar*. 1903. Edited by Finnur Jónsson. Halle/Saale: M. Niemeyer.
- Gísla saga Súrssonar (Gisli Sursson's Saga and the Saga of the People of Eyri)*. 2004. Translated by Judy Quinn. London: Penguin.
- Gläser, Manfred. 1999. "The Development of the Harbours and Market Places of Lübeck." In *Maritime Topography and the Medieval Town*, edited by Jan Bill and Birthe Clausen, pp. 79–86. Studies in Archaeology and History, no. 4. Copenhagen: National Museum of Denmark.
- Glazyrina, Galina. 1997. "Norway and its Ruling Dynasty in Medieval Icelandic Legends of Origin." In *Sagas and the Norwegian Experience*, edited by J.R. Hagland, pp. 199–204. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstuder, Norwegian University of Science and Technology.
- Godelier, Maurice. 1999. *The Enigma of the Gift*. Chicago: University of Chicago Press.
- Goldberg, Paul, Vance Holliday, and C. Reid Ferring. 1999. *Earth Sciences and Archaeology*. New York: Kluwer.
- Goldman, Irving. 1970. *Ancient Polynesian Society*. Chicago: University of Chicago Press.
- Goldstein, Paul S. 2005. *Andean Diaspora: The Tiwanaku Colonies and the Origins of South American Empire*. Gainesville: University Press of Florida.
- Goody, Jack. 1986. *The Logic of Writing and the Organization of Society*. Cambridge, Eng.: Cambridge University Press.
- . 2000. *The Power of the Written Tradition*. Washington, D.C.: Smithsonian Institution Scholarly Press.
- Grágás. 1980. *The Codex Regius of Grágás: Laws of Early Iceland*, vol. 1. Translated by Andrew Dennis, Peter Foote, and Richard Perkins. Winnipeg: University of Manitoba Press.
- . 2000. *The Codex Regius of Grágás: Laws of Early Iceland*, vol. 2. Translated by Andrew Dennis, Peter Foote, and Richard Perkins. Winnipeg: University of Manitoba Press.
- Graham-Campbell, James. 2001. *The Viking World*. London: Frances Lincoln.
- Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78, no. 6: 1360–80.

- Green, Georgia. 1996. *Pragmatics and Natural Language Understanding*. Mahwah: Erlbaum.
- Gregory, C.A. 1997. *Savage Money: The Anthropology and Politics of Commodity Exchange*. Amsterdam: Harwood Academic Publishers.
- Grettis saga (*The Saga of Grettir the Strong*). 2005. Translated by Bernard Scudder. London: Penguin.
- Grierson, Philip. 1959. "Commerce in the Dark Ages: A Critique of the Evidence." *Transactions of the Royal Historical Society* 9: 123–40.
- Grosboll, Sue. 1993. "...And He Said in the Time of the Ynga, They Paid Tribute and Served the Ynga." In *Provincial Inca: Archaeological Ethnohistorical Assessment of the Impact of the Inca State*, edited by Michael A. Malpass, pp. 44–76. Iowa City: University of Iowa Press.
- Grove, James. 1988. *The Little Ice Age*. London: Methuen.
- . 2001. "The Initiation of the 'Little Ice Age' Research: A Perspective from Iceland." In *The Iceberg in the Mist, Northern Research in Pursuit of 'A Little Ice Age'*, edited by A. Ogilvie and T. Jónsson, special issue, *Climatic Change* 48, no. 1: 53–83.
- Guðbergsson, Grétar. 1975. "Myndun Móajarðvegs í Skagafirði." *Íslenzkar landbúnaðar rannsóknir* 7: 20–45.
- . 1996. "Í norðlenskri vist. Um gróður, jarðveg, búskaparlög og sögu." *Íslenzkar landbúnaðar rannsóknir* 10: 31–89.
- Guðmundsson, Ari Trausti. 2007. *Living Earth: Outline of the Geology of Iceland*. Reykjavík: Mál og Menning.
- Guðmundsson, Ari Trausti and Halldór Kjartansson. 1984. *Guide to the Geology of Iceland*. Reykjavík: Bókaútgáfan Örlygur.
- Gunnarsdóttir, Katrín. 2000. *Hof í Hjaltadal. Fornleifaskráning*. Sauðárkrókur: Byggðasafn Skagfirðinga Glaumbæ.
- Gunnarsson, Gísli. 1980. *A Study of Causal Relations in Climate and History with an Emphasis on the Icelandic Experience*. Meddlelande från Ekonomisk-Historiska Institutionen. Lund: Lund Universitet.
- Gunnlaugsson, Gísli Ágúst. 1988. *Family and Household in Iceland 1801–1930: Studies in the Relationship between Demographic and Socio-economic Development, Social Legislation and Family and Household Structures*. Uppsala: University of Uppsala.
- Guthmundsson, Barthi. 1967. *The Origin of the Icelanders*. Lincoln: University of Nebraska Press.
- Hákonarsaga Hákonarsonar. 1910 [1966]. Sturla Þorðarson. Translated by Halldór Hermannsson in *Bibliography of the Sagas of the Kings of Norway and Related Sagas and Tales*. New York: Kraus Reprint Corporation.
- Halbwachs, Maurice. 1992. *On Collective Memory*. Translated by Lewis Coser. Chicago: University of Chicago Press.
- Hall, Thomas D. 2000. "Frontiers, Ethnogenesis, and World-Systems: Rethinking the Theories." In *A World-Systems Reader: New Perspectives on Gender, Urbanism,*

- Cultures, Indigenous Peoples, and Ecology*, edited by Thomas D. Hall, pp. 237–70. Lanham: Rowman and Littlefield.
- Hallsdóttir, Margrét. 1987. *Pollen Analytical Studies of Human Influence on Vegetation in Relation to the Landnám Tephra Layer in Southwest Iceland*. Lundqua Thesis 18, Lund: Department of Quaternary Geology, Lund University.
- Halperin, Rhoda. 1988. *Economics Across Cultures: Towards a Comparative Science of the Economy*. New York: Macmillan.
- . 1994. *Cultural Economies Past and Present*. Austin: University of Texas.
- Hanks, W.F. 1989. "Text and Textuality." *Annual Review of Anthropology* 18: 95–127.
- Hansen, Inge and Chris Wickham, eds. 2000. *The Long Eighth Century: The Transformation of the Roman World*. Leiden: Brill.
- Harrison, Ramona, ed. 2009. *Gásir Hinterlands Project 2009 Midden Prospection and Excavation*. FSI, Reykjavík and CUNY NORSEC, New York. FS440-06384.
- Harrison, Ramona, Howell M. Roberts, and W. Paul Adderley. 2008. "Gásir in Eyjafjörður: International Exchange and Local Economy in Medieval Iceland." *Journal of the North Atlantic* 1: 99–119.
- Harte, N.B. and K.G. Ponting. 1983. *Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E.M. Carus-Wilson*. London: Heinemann.
- Harvey, H.R. 1991. *Land Politics in the Valley of Mexico: A Two-Thousand-Year Perspective*. Albuquerque: University of New Mexico Press.
- Hastorf, Christine and Terrence D'Altroy. 2001. "The Domestic Economy, Households, and Imperial Transformation." In *Empire and Domestic Economy*, edited by Terrence D'Altroy and Christine Hastorf, pp. 3–26. New York: Kluwer.
- Hastrup, Kirsten. 1985. *Culture and History in Medieval Iceland: An Anthropological Analysis of Structure and Change*. Oxford: Clarendon Press.
- . 1990. *Island of Anthropology: Studies in Past & Present Iceland*. Odense: Odense University Press.
- . 1991. *Nature and Policy in Iceland 1400–1800: An Anthropological Analysis of History and Mentality*. Oxford: Clarendon Press.
- . 1992. "Uchronia and the Two Histories of Iceland, 1400–1800." In *Other Histories*, edited by Kirsten Hastrup, pp. 102–20. London: Routledge.
- . 1998. *A Place Apart: An Anthropological Study of the Icelandic World*. Oxford: Clarendon Press.
- . 2004. "Destined to Defeat: Old Icelandic Commercial Problems." In *Assyria and Beyond: Studies Presented to Mogens Trolle Larsen*, edited by J.G. Dercksen, pp. 269–80. Leiden: Nederlands Instituut Voor Het Nabije Oosten.
- Hatim, B. and I. Mason. 1990. *Discourse and the Translator*. London: Longman.
- Hayden, Brian. 1995. "Pathways to Power: Principles for Creating Socioeconomic Inequalities." In *Foundations of Social Inequality*, edited by T.D. Price and G. Feinman, pp. 15–86. New York: Plenum.

- . 1996. "Thresholds of Power in Emergent Complex Societies." In *Emergent Complexity: The Evolution of Intermediate Societies*, edited by J.E. Arnold, pp. 50–8. Archaeological Series, no. 9. Ann Arbor: International Monographs in Prehistory.
- Haywood, John. 1995. *The Penguin Historical Atlas of the Vikings*. London: Penguin.
- Hedeager, Lotte. 1993. "The Creation of Germanic Identity: A European Origin-Myth." In *Frontières d'Empire. Nature et Signification des Frontières Romaines*, edited by P. Brun, S. van der Leeuw, and C.R. Whittaker, pp. 121–31. Nemours: Ed. A.P.R.A.I.F.
- . 2008. "Scandinavia before the Viking Age." In *The Viking World*, edited by Stefan Brink, pp. 11–22. New York: Routledge.
- Heimskringla*. 1979. Snorri Sturluson. Translated by Bjarni Aðalbjarnarson. Reykjavík: Hið Íslenska Fornritafélag.
- Herlihy, David. 1983. *Medieval Households*. Cambridge, Mass.: Harvard University Press.
- Herschend, Frands. 1994. "Models of Petty Rulership: Two Early Settlements in Iceland." *TOR* 26: 163–91.
- Hervarar saga og Heiðreks konungs (The Saga of King Heiðrek the Wise)*. 1960. Translated by Christopher Tolkien. London: Nelson.
- Hines, John. 1997. "Trading Places: Royalty and Urbanism in Norse Literature." In *Sagas and the Norwegian Experience*, edited by J.R. Hagland, pp. 263–70. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstuder, Norwegian University of Science and Technology.
- Hjálmarsson, Jón R. 1993. *History of Iceland: From Settlement to the Present Day*. Reykjavík: Iceland Review Press.
- Hjartarson, A. and Þ.H. Hafstað. 1999. *Jarðfræði á Hofsafrétt í Skagafirði*. OS-99031. Reykjavík: Orkustofnun.
- Hodges, Richard. 1982. *Dark Age Economics: The Origins of Towns and Trade, A.D. 600–1000*. London: Duckworth.
- . 1988 "Charlemagne's Elephant and the Beginnings of Commoditisation in Europe." *Acta Archaeologica* 59: 155–68.
- . 2000. *Towns and Trade in the Age of Charlemagne*. London: Duckworth Press.
- Hodges, Richard and David Whitehouse. 1983. *Mohammed, Charlemagne, and the Origins of Europe*. London: Duckworth Press.
- Holliday, Vance. 1992. *Soils in Archaeology: Landscape Evolution and Human Occupation*. Washington, D.C.: Smithsonian Institution Scholarly Press.
- Hopkins, Terence and Immanuel Wallerstein. 1982. *World-Systems Analysis: Theory and Methodology*. Beverly Hills: Sage Publications.
- Hornborg, Alf and Carole Crumley, eds. 2007. *The World System and the Earth System: Global Socioenvironmental Change and Sustainability since the Neolithic*. Walnut Creek: Left Coast Press.
- Hrafnkel's Saga and Other Icelandic Stories*. 1971. Translated by Hermann Pálsson. London: Penguin.

- Hreinsson, Viðar, ed. 1997. *The Complete Sagas of Icelanders: Regional Feuds*. Reykjavík: Leifur Eiríksson Publishing.
- Hume, Leonard John. 1993. *Another Look at the Cultural Cringe*. Sydney: The Centre for Independent Studies.
- Humphrey, Caroline and Stephen Hugh-Jones. 1992. *Barter, Exchange, and Value: An Anthropological Approach*. Cambridge, Eng.: Cambridge University Press.
- Hungrvaka. 2002. *Biskupa sögur II*. Íslenzk fornrit XVI. Edited by Ásdís Egilsdóttir, pp. 1–43. Reykjavík: Hið íslenska fornritafélag.
- Hunt, Charles. 1972. *Geology of Soils: Their Evolution, Classification, and Uses*. San Francisco: W.H. Freeman.
- Hymes, Dell. 1972. "Models of the Interaction of Language and Social Life." In *Directions in Sociolinguistics: The Ethnography of Communication*, edited by John Gumperz and Dell Hymes, pp. 35–71. New York: Holt, Rinehart and Winston.
- Ingimundarson, Jón Haukur. 1989. *Dynamics of Subsistence in Svalbarðshreppur*. Reykjavík: Iceland Review Press.
- . 1992. "Spinning Goods and Tales: Market, Subsistence and Literary Productions." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 217–30. Enfield Lock: Hisarlik Press.
- . 1995. "Of Sagas and Sheep: Toward a Historical Anthropology of Social Change and Production for Market, Subsistence and Tribute in Early Iceland (10th to the 13th Century)." Ph.D. diss., Department of Anthropology, University of Arizona.
- Ingold, Tim. 1993. "The Temporality of Landscape." *World Archaeology* 25, no. 2: 152–74.
- . 2000. *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*. London: Routledge.
- Ingstad, Anne. 1985. *The Norse Discovery of America*. Translated by Elizabeth Seeberg. Oslo: Norwegian University Press.
- Íslendingabók (*The Book of the Icelanders*). 1980. Ari Þorgilsson. Translated by Alan Boucher. Reykjavík: Iceland Review Press.
- Íslendingabók, Landnámabók. 1968. Íslenzk fornrit. Edited by Jakob Benediktsson. Reykjavík: Hið íslenska fornritafélag.
- Jaeger, Stephen. 1985. *The Origins of Courtliness*. Philadelphia: University of Philadelphia Press.
- Jansson, Ingmar. 1996. *The Viking Heritage: A Dialogue between Cultures*. Stockholm: Statens Historiska Museum.
- Jarðabók. 1930. Compiled by S.L. Möller, after Árni Magnússon and Páll Vídalín. Kaupmannahöfn: Íslenska fræðafélagi í Kaupmannahöfn.
- Jarðabók Árna Magnússonar og Páls Vídalíns I–XI. 1913–1943. Kaupmannahöfn: Hið íslenska fornritafélag í Kaupmannahöfn.
- Jarðabók Árna Magnússonar og Páls Vídalíns I–XIII. 1980–1990. Reykjavík: Hið íslenska fornritafélag, Sögufélag.

- Jarðatal á Íslandi, með brauðalýsingu, fólkstölu í hreppum og prestaköllum, ágripi úr búnaðartöflum 1835–1845, skýrslum um sölu þjóðjarða á landinu* (Jón Johnsen). 1845. Kaupmannahöfn: Landsyfirréttinum.
- Jesch, Judith. 1991. *Women in the Viking Age*. Woodbridge: Boydell Press.
- Jochens, Jenny. 1980. "The Church and Sexuality in Medieval Iceland." *Journal of Medieval History* 6: 377–92.
- . 1986a. "Consent in Marriage: Old Norse Law, Life, and Literature." *Scandinavian Studies* 58, no. 2: 142–76.
- . 1986b. "The Medieval Icelandic Heroine: Fact or Fiction?" *viator* 17: 35–50.
- . 1991. "The Illicit Love Visit: An Archaeology of Old Norse Sexuality." *Journal of the History of Sexuality* 1, no. 3: 357–92.
- . 1993. "Með Jákæði Hennar Sjálfrar: Consent as a Signifier in the Old Norse World." In *Consent and Coercion to Sex and Marriage in Ancient and Medieval Societies*, edited by Angeliki Laiou, pp. 271–89. Washington, D.C.: Dumbarton Oaks.
- . 1995. *Women in Old Norse Society*. Ithaca: Cornell University Press.
- Jóhannesson, Jón. 1974. *A History of the Old Icelandic Commonwealth: Íslendinga Saga*. Translated by Haraldur Besson. Winnipeg: University of Manitoba Press.
- Johnson, Gregory. 1980. "Rank-Size Convexity and System Integration: A View from Archaeology." *Economic Geography* 56, no. 3: 234–47.
- Johnson, Allen W. and Timothy K. Earle. 1987. *The Evolution of Human Societies: From Foraging Group to Agrarian State*. Stanford: Stanford University Press.
- Johnstone, Barbara. 1996. *The Linguistic Individual: Self Expression in Language and Linguistics*. Oxford: Oxford University Press.
- Jon's saga ins Helga*. 2003. *Biskupa sögur I. Íslenzk fornrit XV*. Edited by Sigurgeir Steingrímsson, Ólafur Halldórsson, and Peter Foote, pp. 173–316. Reykjavík: Hið íslenska fornritafélag.
- Jones, Gwyn. 1986. *The Norse Atlantic Saga: Being the Norse Voyages of Discovery and Settlement to Iceland, Greenland, and North America*. Oxford: Oxford University Press.
- Joyce, Arthur and Raymond Mueller. 1997. "Prehispanic Human Ecology of the Rio Verde Drainage Basin, Mexico." *World Archaeology* 29, no. 1: 75–94.
- Júlíusdóttir, Sigríður. 2005. "The Oldest Churches in Norway." In *Church Centres: Church Centres in Iceland from the 9th to the 13th Century and Their Parallels in Other Countries*, edited by Helgi Þorláksson, pp. 187–99. Reykholzt: Snorrastofa, Cultural and Medieval Centre.
- Júlíusson, Árni Daniel. 2000. "The Environmental Effects of Icelandic Subsistence Farming in the Late Middle Ages and the Early Modern Period." In *Aspects of Arctic and Sub-Arctic History*, edited by Ingi Sigurðsson and Jón Skaptason, pp. 279–88. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.

- Junker, Laura L. 1999. *Raiding, Trading, and Feasting: The Political Economy of Philippine Chiefdoms*. Honolulu: University of Hawaii Press.
- Kardulias, P. Nick. 1999. "Multiple Levels in the Aegean Bronze Age World System." In *World Systems Theory in Practice: Leadership, Production, and Exchange*, edited by P. Nick Kardulias, pp. 179–202. Lanham: Rowman and Littlefield.
- Karlsson, Gunnar. 2000. *Iceland's 100 Years: A History of a Marginal Society*. Reykjavík: Mál og Menning.
- Karras, Ruth Mazo. 1988. *Slavery and Society in Medieval Scandinavia*. New Haven: Yale University Press.
- . 1992. "Servitude and Sexuality in Medieval Iceland." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 289–304. Enfield Lock: Hisarlik Press.
- Keeley, Helen and Richard Macphail. 1981. *A Soil Handbook for Archaeologists*. London: Bulletin of the Institute of Archaeology.
- Kehoe, Alice and Mary Beth Emmerichs, eds. 1999. *Assembling the Past: Studies in the Professionalization of Archaeology*. Albuquerque: University of New Mexico Press.
- Kellogg, Robert. 2001. "Introduction." In *The Sagas of Icelanders: A Selection*, edited by Robert Kellogg, pp. xv–lvii. New York: Viking.
- Keller, Christian. 2008. "The Norse Expansion during the Viking and Middle Ages." Paper presented at the Nordic Network of Cultural and Environmental History in the Nordic Viking Age and Medieval Time Conference, Hólar.
- Kirch, Patrick. 1991. "Chiefship and Competitive Involution: The Marquesas Islands of Eastern Polynesia." In *Chiefdoms: Power, Economy, and Ideology*, edited by T. Earle, pp. 119–45. Cambridge: Cambridge University Press.
- . 2000. *On the Road of the Winds: An Archaeological History of the Pacific Islands before European Contact*. Berkeley: University of California Press.
- Kirch, Patrick and Joanna Ellison. 1994. "Palaeoenvironmental Evidence for Human Colonization of Remote Oceanic Island." *Antiquity* 68: 310–21.
- Kohl, Philip. 1987. "The Use and Abuse of World Systems Theory: The Case of the Pristine West Asian State." *Advances in Archaeological Method and Theory* 11: 1–35.
- Kowalewski, Stephen. 2008. "Regional Settlement Pattern Studies." *Journal of Archaeological Research* 16: 225–85.
- Kristinsson, Axel. 2000. "Productivity and Population in Pre-Industrial Iceland." In *Aspects of Arctic and Sub-Arctic History*, edited by Ingi Sigurðsson and Jón Skaptason, pp. 270–8. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.
- Kristjánsson, Jónas. 1988. *Eddas and Sagas: Iceland's Medieval Literature*. Reykjavík: Hið íslenska bókmenntafélag.

- Kristni saga*. 2003. *Biskupa sögur I*. Íslensk fornrit XV. Edited by Sigurgeir Steingrímsson, Ólafur Halldórsson, and Peter Foote, pp. 1–48. Reykjavík: Hið íslenska fornritafélag.
- Krugman, Paul. 1995. *Development, Geography, and Economic Theory*. Cambridge, Mass.: MIT Press.
- LaBianca, Øystein S. and Sandra Arnold Scham. 2005. "Introduction: Ancient Network Societies." In *Connectivity in Antiquity: Globalization as a Long-Term Historical Process*, edited by Øystein S. LaBianca and Sandra Arnold Scham, pp. 1–5. Approaches in Anthropological Archaeology. London: Equinox.
- Lacy, Terry G. 1998. *Ring of Seasons: Iceland – Its Culture and History*. Ann Arbor: The University of Michigan Press.
- Lamb, Hubert. 1984. "Climate and History in Northern Europe and Elsewhere." In *Climatic Changes on a Yearly to Millennial Basis*, edited by N. Möner and W. Karlén, pp. 225–40. Dordrecht: D. Reidel.
- Landnámabók (The Book of Settlements)*. 1972. Ari Þorgilsson. Translated by Pálsson, Hermann and Paul Edwards. Winnipeg: University of Manitoba.
- Larrington, Carolyne. 1996. "Helgakviða Hjörvarðssonar and Helgakviða Hundingsbana II." In *The Poetic Edda: A New Translation*. Oxford: Oxford University Press.
- Larsen, Guðrún and Sigurður Þórarinnsson. 1978. "H-4 and Other Acid Hekla Tephra Layers." *Jökull* 27: 28–46.
- Lárusson, Björn. 1967. *The Old Icelandic Land Registers*. Lund: Gleerup Press.
- Laurentius saga biskups*. 1969. Einar Hafliðason Edited by Árni Björnsson. Reykjavík: Handritastofnun Íslands.
- Laurentius saga (The Life of Laurence, Bishop of Hólar)*. 1890. Translated by Oliver Elton. London: Rivington Press.
- Laxdæla saga*. 1964. Translated by A. Margaret Arent. Seattle: University of Washington Press.
- Laxness, Halldór. 1968. *Christianity at Glacier*. Translated by Magnus Magnusson. Reykjavík: Helgafell.
- Levy, T.E. and T. Higham, eds. 2005. *The Bible and Radiocarbon Dating: Archaeology, Text and Science*. London: Equinox.
- Lightfoot, Kent. 1995. "Culture Contact Studies: Redefining the Relationship between Prehistoric and Historic Archaeology." *American Antiquity* 60, no. 2: 199–217.
- Lightfoot, Kent, A. Martinez, and A.M. Schiff. 1998. "Daily Practice and Material Culture in Pluralistic Social Settings: An Archaeological Study of Culture Change and Persistence from Fort Ross, California." *American Antiquity* 63: 199–222.
- Lopez, Robert. 1976. *The Commercial Revolution of the Middle Ages, 950–1350*. Cambridge, Eng.: Cambridge University Press.
- Lucas, Gavin, ed. 2009. *Hofstaðir: Excavations of a Viking Age Feasting Hall in North-Eastern Iceland*. Reykjavík: Institute of Archaeology.

- Madsen, Per Kristian. 1999. "Ribe between East and West: A North Sea Harbour and Its Baltic Connections, 700–1600." In *Maritime Topography and the Medieval Town*, edited by Jan Bill and Birthe Clausen, pp. 197–202. Studies in Archaeology and History 4. Copenhagen: National Museum of Denmark.
- Magnusson, Magnus. 2005 [1987]. *Iceland Saga*. Gloucestershire: Tempus.
- Mairs, Kerry-Anne, Mike J. Church, Andrew Dugmore, and Guðrún Sveinbjarnardóttir. 2006. "Degrees of Success: Evaluating the Environmental Impacts of Long Term Settlement in South Iceland." In *Dynamics of Northern Societies*, edited by Jette Arneborg and Bjarne Grønnow, pp. 365–74. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, 10–14 May 2004. Copenhagen: National Museum Studies in Archaeology and History.
- Marcus, Joyce. 1998. "The Peaks and Valleys of Ancient States: An Extension of the Dynamic Model." In *Archaic States*, edited by Gary Feinman and Joyce Marcus, pp. 59–94. Santa Fe: School of American Research.
- Marx, Karl. 1981[1852]. *The Eighteenth Brumaire of Louis Bonaparte*. New York: International Publishers.
- Massey, Doreen. 2005. *For Space*. London: Sage Publications.
- . 2006. "Landscape as a Provocation." *Journal of Material Culture* 11, nos. 1–2: 33–48.
- Mauss, Marcel. 1967 [1925]. *The Gift: The Forms and Reason for Exchange in Archaic Societies*. New York: W.W. Norton.
- McGovern, Thomas H. 1990. "The Archaeology of the Norse North Atlantic." *Annual Review of Anthropology* 19: 331–51.
- . 1991. "Climate, Correlation, and Causation in Norse Greenland." *Arctic Anthropology* 28, no. 2: 77–100.
- . 1994. "Management for extinction in Norse Greenland." In *Historical Ecology: Cultural Knowledge and Changing Landscape*, edited by C. Crumley, pp. 127–54. Santa Fe: School of American Research.
- . 2000. "The Demise of Norse Greenland." In *Vikings: The North Atlantic Saga*, edited by William W. Fitzhugh and Elisabeth I. Ward, pp. 327–39. Washington, D.C.: Smithsonian Institution Scholarly Press.
- . 2001. "Walrus Tusks from Aðalstræti, Reykjavík: Zooarchaeological Report." In *Archaeological Excavations at Aðalstræti 14–18, 2001: A Preliminary Report*, edited by Howell Roberts, Appendix 3. Reykjavík: Fornleifastofnun Íslands FS 156-00161.
- . 2004. "North Atlantic Biocultural Organization (NABO) 10 Years on: Science, Education and Community." In *Atlantic Connections and Adaptations: Economies, Environments and Subsistence in Lands Bordering the North Atlantic*, edited by R.A. Housley and G. Coles, pp. 254–9. Symposia of the Association for Environmental Archaeology, no. 21. Oxford: Oxbow Books.

- . 2009. "The Archaeofauna." In *Hofstaðir: Excavations of a Viking Age Feasting Hall in North-Eastern Iceland*, edited by Gavin Lucas, pp. 168–252. Reykjavík: Institute of Archaeology.
- McGovern, T., G. Bigelow, T. Amorosi, and D. Russell. 1988. "Northern Islands, Human Error, and Environmental Degradation: A View of Social and Ecological Change in the Medieval North Atlantic." *Human Ecology* 16, no. 3: 225–70.
- McGovern, Thomas H., Orri Vésteinsson, Adolf Friðriksson, Mike Church, Ian Lawson, Ian A. Simpson, Arni Einarsson, Andy Dugmore, Gordon Cook, Sophia Perdikaris, Kevin J. Edwards, Amanda M. Thomson, W. Paul Adderley, Anthony Newton, Gavin Lucas, Ragnar Edvardsson, Oscar Aldred, and Elaine Dunbar. 2007. "Landscapes of Settlement in Northern Iceland: Historical Ecology of Human Impact and Climate Fluctuation on the Millennial Scale." *American Anthropologist* 109, no. 1: 27–51.
- Meskeel, Lynn. 2003. "Memory's Materiality: Ancestral Presence, Commemorative Practice and Disjunctive Locales." In *Archaeologies of Memory*, edited by Ruth van Dyke and Susan Alcock, pp. 34–55. Oxford: Blackwell.
- Metcalf, D.M. 1984. "Monetary Circulation in Southern England in the First Half of the Eighth Century." In *Scettas in England and on the Continent*, edited by D. Hill and D.M. Metcalf, pp. 12–23. Oxford: Oxford University Press.
- Miller, William Ian. 1983. "Choosing the Avenger: Some Aspects of the Bloodfeud in Medieval Iceland and England." *Law and History Review* 1, no. 2: 159–204.
- . 1986. "Gift, Sale, Payment, Raid: Case Studies in the Negotiation and Classification of Exchange in Medieval Iceland." *Speculum* 61.
- . 1990. *Bloodtaking and Peacemaking: Feud, Law, and Society in Saga Iceland*. Chicago: University of Chicago Press.
- Montgomery, J.E. 2008. "Arabic Sources on the Vikings." In *The Viking World*, edited by Stefan Brink, pp. 550–61. New York: Routledge.
- Moore, Richard I. 2000. *The First European Revolution, c. 970–1215*. Oxford: Blackwell.
- Moreland, John. 2000a. "Concepts of the Medieval Economy." In *The Long Eighth Century: The Transformation of the Roman World*, edited by Inge Hansen and Chris Wickham, pp. 1–34. Leiden: Brill.
- . 2000b. "The Significance of Production in the Eighth-Century England." In *The Long Eighth Century: The Transformation of the Roman World*, edited by Inge Hansen and Chris Wickham, pp. 69–104. Leiden: Brill.
- . 2001. *Archaeology and Text*. London: Duckworth.
- Morris, Craig and Donald E. Thompson. 1985. *Huánuco Pampa: An Inca City and Its Hinterland*. London: Thames and Hudson.
- Myhre, Bjørn. 2000. "The Early Viking Age in Norway." *Acta Archaeologica* 71: 35–47.
- Näsman, Ulf. 2000. "Exchange and Politics: The Eighth-Early Ninth Century In Denmark." In *The Long Eighth Century: The Transformation of the Roman World*, edited by Inge Hansen and Chris Wickham, pp. 34–68. Leiden: Brill.

- Netting, Robert. 1982. *Balancing on an Alp: Ecological Change and Continuity in a Swiss Mountain Community*. Cambridge, Eng.: Cambridge University Press.
- . 1990. "Population, Permanent Agriculture, and Politics: Unpacking the Evolutionary Portmanteau." In *The Evolution of Political Systems: Sociopolitics in Small-Scale Sedentary Societies*, edited by S. Upham, pp. 21–61. Cambridge, Eng.: Cambridge University Press.
- . 1993. *Smallholders, Householders: Farm Families and the Ecology of Intensive, Sustainable Agriculture*. Stanford: Stanford University Press.
- Newmeyer, Frederick. 1986. *The Politics of Linguistics*. Chicago: University of Chicago Press.
- Niditch, Susan. 1996. *Oral World and Written Word*. Louisville: Westminster John Knox Press.
- Njal's saga*. 2000. Translated by Robert Cook. London: Penguin.
- Nordahl, Else. 1988. *Reykjavík from the Archaeological Point of View*. Aun 12. Uppsala: Department of Archaeology, Uppsala University.
- Nordal, Jóhannes. 1975. *Iceland 874–1974. Handbook Published by the Central Bank of Iceland on the Occasion of the Eleventh Centenary of the Settlement of Iceland*. Reykjavík: Central Bank of Iceland.
- Nordal, Sigurður. 1940. *Hrafnkatla*. Studia Islandica 7. Reykjavík: H.Í.
- . 1953. "Sagalitteraturen." *Nordisk kultur* 8b: 180–273.
- Oates, Joan. 1993. "Trade and Power in the Fifth and Fourth Millennia BC: New Evidence from Northern Mesopotamia." *World Archaeology* 24, no. 3: 403–22.
- Ogilvie, Astrid E.J. 1984a. "The Impact of Climate on Grass Grown and Hay Yield in Iceland: 1601 to 1780." In *Climatic Changes on a Yearly to Millennial Basis*, edited by N. Mörner and W. Karlén, pp. 349–52. Dordrecht: D. Reidel.
- . 1984b. "The Past Climate and Sea-Ice Record from Iceland, Part I: Data to A.D. 1780." *Climatic Change* 6: 131–52.
- . 1990. "Climatic Changes in Iceland A.D. c. 865 to 1598." *Acta Archaeologica* 61: 233–51.
- . 2000. "Climate and Farming in Northern Iceland, ca. 1700–1850." In *Aspects of Arctic and Sub-Arctic History*, edited Ingi Sigurðsson and Jón Skaptason, pp. 289–99. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.
- Ogilvie, Astrid E.J. and Trausti Jónsson. 2001. "Little Ice Age Research: A Perspective from Iceland." In *The Iceberg in the Mist, Northern Research in Pursuit of 'A Little Ice Age'*, edited by A. Ogilvie and T. Jónsson, special issue, *Climatic Change* 48, no. 1: 9–52.
- Ogilvie, Astrid E.J. and Thomas H. McGovern. 2000. "Sagas and Science: Climate and Human Impacts in the North Atlantic." In *Vikings: The North Atlantic Saga*, edited by William W. Fitzhugh and Elisabeth I. Ward, pp. 385–93. Washington, D.C.: Smithsonian Scholarly Institution Press.

- Ólafsdóttir, Rannveig and Hjalti J. Guðmundsson. 2002. "Holocene Land Degradation and Climatic Change in Northeastern Iceland." *The Holocene* 12, no. 2: 159–67.
- Ólafsdóttir, Rannveig and Árni Daníel Júlíusson. 2000. "Farmer's Perception of Land-Cover Changes in North-East Iceland." *Land Degradation and Development* 11: 439–58.
- Ólafsson, Guðmundur. 2006. *Hjálmsstaðir í Laugardal: Jarðhús og Hjálmar*. Reykjavík: Þjóðminjasafn Íslands.
- Ólafsson, Haraldur. 2000. "Looking Beyond the Horizon: The Icelandic Nation in Search of an Identity." In *Aspects of Arctic and Sub-Arctic History*, edited by Ingi Sigurðsson and Jón Skaptason, pp. 501–6. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.
- Ólason, Vésteinn. 1998. *Dialogues with the Viking Age*. Reykjavík: Heimskingla Press.
- . 2005. "Family Sagas." In *A Companion to Old Norse-Icelandic Literature and Culture*, edited by Rory McTurk, pp. 101–18. Oxford: Blackwell.
- Ong, Walter. 1982. *Orality and Literacy: The Technologizing of the Word*. London: Routledge.
- Orser, C.E. 1998. "The Archaeology of African Diaspora." *Annual Review of Anthropology* 27: 63–82.
- Óskarsson, Hlynur, Ólafur Arnalds, Jón Guðmundsson, and Grétar Guðbergsson. 2004. "Organic Carbon in Icelandic Andosols: Geographical Variation and Impact of Erosion." *Catena* 56: 225–38.
- Pálsson, Árni. 1932. "Um lok Þrældóms á Ískandi." *Skírnir* 106: 191–203.
- Pálsson, Gísli. 1992. *Beyond Boundaries: Understanding, Translation and Anthropological Discourse*. Oxford: Berg.
- . 1995. *The Textual Life of Savants*. Chur: Harwood Academic Publishers.
- Pálsson, Hjalti. 1999. *Byggðasaga Skagafjarðar, vol. 1, Skefilsstaðahreppur/Skarðshreppur*. Sauðárkrókur: Sögufélg Skagafjarðinga.
- . 2001. *Byggðasaga Skagafjarðar, vol. 2, Staðarhreppur/Seyluhreppur*. Sauðárkrókur: Sögufélg Skagafjarðinga.
- . 2004. *Byggðasaga Skagafjarðar, vol. 3, Lýtingsstaðahreppur*. Sauðárkrókur: Sögufélg Skagafjarðinga.
- . 2007. *Byggðasaga Skagafjarðar, vol. 4, Akrahreppur*. Sauðárkrókur: Sögufélg Skagafjarðinga.
- Pálsson, Hermann and Paul Edwards. 1972. "Introduction." In *Landnámabók (The Book of Settlements)*, edited and translated by Pálsson, Hermann and Paul Edwards, pp. 1–13. Winnipeg: University of Manitoba.
- Pálsson, Gísli and Kristín E. Harðardóttir. 2002. "For Whom the Cell Tolls: Debates about Biomedicine." *Current Anthropology* 43, no. 2: 271–301.

- Parkinson, William and Michael Galaty. 2007. "Secondary States in Perspective: An Integrated Approach to State Formation in the Prehistoric Aegean." *American Anthropologist* 109, no. 1: 113–29.
- Paynter, R. 1989. "The Archaeology of Equality and Inequality." *Annual Review of Anthropology* 18: 369–99.
- . 2000. "Historical and Anthropological Archaeology: Forging Alliances." *Journal of Archaeological Research* 8, no. 1: 1–37.
- Peregrine, Peter N. 2000. "Archaeology and World-Systems Theory." In *A World-Systems Reader: New Perspectives on Gender, Urbanism, Cultures, Indigenous Peoples, and Ecology*, edited by Thomas D. Hall, pp. 59–68. Lanham: Rowman and Littlefield.
- Perdikaris, Sophia and Thomas H. McGovern. 2007. "Chieftains, Cod Fish, and Walrus: Intensification in the North Atlantic." In *Seeking a Richer Harvest: The Archaeology of Subsistence, Intensification, and Change*, edited by Tina Thurston and Christopher Fisher, pp. 193–218. New York: Springer Science Press.
- . 2008. "Codfish and Kings, Seals and Subsistence: Norse Marine Resource Use in the North Atlantic." In *Human Impacts on Ancient Marine Ecosystems: A Global Perspective*, edited by Torben C. Rick and Jon M. Erlandson, pp. 187–214. Berkeley: University of California Press.
- Pierce, Elizabeth. 2009. "Walrus Hunting and the Ivory Trade in Early Iceland." *Archaeologica Islandica* 7: 55–63.
- Pirenne, Henri. 1954. *Mohammed and Charlemagne*. London: George Allen Press.
- Preucel, Robert and Ian Hodder. 1996. "The Production of Value." In *Contemporary Archaeology in Theory: A Reader*, edited by Robert Preucel and Ian Hodder, pp. 99–113. Oxford: Blackwell.
- Price, Barbara. 1978. "Secondary State Formation: An Explanatory Model." In *Origins of the State: The Anthropology of Political Evolution*, edited by Ronald Cohen and Elman R. Service, pp. 161–86. Philadelphia: Institute for the Study of Human Issues.
- Quinn, Judy. 2000. "From Orality to Literacy in Medieval Iceland." In *Old Icelandic Literature and Society*, edited by Margaret Clunies Ross, pp. 30–60. Cambridge, Eng.: Cambridge University Press.
- Rabinow, Paul. 1983. *The Foucault Reader*. New York: Pantheon.
- Randsborg, Klavs. 1982. "Rank, Rights and Resources: An Archaeological Perspective from Denmark." In *Ranking, Resource and Exchange*, edited by C. Renfrew and S. Shennan, pp. 132–40. Cambridge, Eng.: Cambridge University Press.
- . 2000. "Colonization: Greek and Viking." *Acta Archaeologica* 71: 171–82.
- Rappaport, Roy. 1978. "Maladaptations in Social Systems." In *The Evolution of Social Systems*, edited by J. Friedman and M.J. Rowlands, pp. 49–71. Pittsburgh: University of Pittsburgh Press.
- Redman, Charles L. 1999. *Human Impact on Ancient Environments*. Tucson: University of Arizona Press.

- Reijnders, P., S. Brasseur, J. van der Toon, P. van der Wolf, I. Boyd, J. Harwood, D. Lavigne, and L. Lowry. 1993. *Seals, Fur Seals, Sea Lions, and Walrus*. International Union for the Conservation of Nature and Natural Resources, Status Survey and Conservation Action Plan. Gland, Switzerland: IUCN.
- Renfrew, Colin. 1972. *Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* London: Methuen Press.
- . 1986. "Peer Polity Interaction and Socio-Political Change." In *New Directions in Archaeology*, edited by Colin Renfrew and John F. Cherry, pp. 1–18. Cambridge, Eng.: Cambridge University Press.
- Renfrew, Colin and Paul Bahn. 2004. *Archaeology: Theories, Methods, and Practice*. 4th ed. New York: Thames & Hudson.
- Rhee, Song Nai. 1992. "Secondary State Formation: The Case of Koguryo State." In *Pacific Northeast Asia in Prehistory*, edited by C. Melvin Aikens and Sonj Nei Rhee, pp. 191–96. Pullman: Washington State University Press.
- Roberts, Howell, ed. 2001. *Archaeological Excavations at Aðalstræti 14–18, 2001: A Preliminary Report*. Reykjavík: Fornleifastofnun Íslands FS 156-00161.
- Robertshaw, Peter. 2000. "Sibling Rivalry? The Intersection of Archaeology and History." *History in Africa* 27: 261–86.
- Roediger, H.L. and L.M. Goff. 1998. "Memory." In *A Companion to Cognitive Science*, edited by W. Bechtel and G. Graham, pp. 250–64. Oxford: Blackwell.
- Rosaldo, Renato. 1989. *Culture and Truth: The Remaking of Social Analysis*. Boston: Beacon Press.
- Rosedahl, Else. 1998 [1987]. *The Vikings*. Rev. 2nd ed. London: Penguin.
- . 2003. "Walrus Ivory and Other Northern Luxuries: Their Importance for Norse Voyages and Settlements in Greenland and America." In *Vinland Revisted: The Norse World at the Turn of the Millennium*, edited by Shannon Lewis-Simpson, pp. 145–52. St. John's: Historic Sites Association of Newfoundland and Labrador.
- . 2005. "Walrus Ivory: Demand, Supply, Workshops, and Greenland." In *Viking and Norse in the North Atlantic: Select Papers from the Proceedings of the 14th Viking Congress, Tórshavn, 2001*, edited by Andras Mortensen and Simun, pp. 182–91. Tóshavn: Annales Societatis Scientiarum Faeroensis Supplementa, 44.
- . 2007. "Walrus Ivory: On the Function and Economic Importance of Walrus Ivory around A.D. 900." In *A Late 9th-Century Account of Voyages along the Coasts of Norway and Denmark and Its Cultural Context*, edited by Janet Bately and Anton Englert, pp. 92–3. Roskilde: The Viking Ship Museum in Roskilde Press.
- Rowlands, M.J., M.T. Larsen, and K. Kristiansen, eds. 1987. *Centre and Periphery in the Ancient World*. Cambridge, Eng.: Cambridge University Press.
- Saga of Hallfred Troublesome-poet*. 1997. Translated by Diana Whaley. In *Sagas of the Warrior Poets*, edited by Diana Whaley, pp. 69–108. London: Penguin.

- Sahlins, Marshall. 1963. "Poor Man, Rich Man, Big-Man, Chief: Political Types in Melanesia and Polynesia." *Comparative Studies in Society and History* 5, no. 3: 285–303.
- . 1985. *Islands of History*. Chicago: University of Chicago Press.
- Saussure, Ferdinand. 1959. *Course in General Linguistics*. Translated by Wade Baskin. New York: McGraw-Hill.
- Sawyer, Birgit. 1988. *Property and Inheritance in Viking Scandinavia: The Runic Evidence*. Occasional Papers on Medieval Topics 2. Alingsås: Viktoria Bokförlag.
- Sawyer, Peter. 1984. "Othere and Viking Age Trade." In *Two Voyages at the Court of King Alfred*, edited by Niels Lund, pp. 43–55. York: William Sessions.
- . 2001. *The Oxford Illustrated History of the Vikings*. Oxford: Oxford University Press.
- Schacter, Daniel. 1996. *Searching for Memory: The Brain, the Mind, and the Past*. New York: Basic Books.
- Schortman, Edward M. and Patricia A. Urban. 1998. "Culture Contact Structure and Process." In *Studies in Culture Contact: Interaction, Culture Change, and Archaeology*, edited by J.G. Cusick, pp. 102–25. Carbondale: Southern Illinois University.
- Service, Elman. 1975. *Origins of the State and Civilization*. New York: W.W. Norton.
- Shelley, Fred M. and Colin Flint. 2000. "Geography, Place, and World-Systems Theory." In *A World-Systems Reader: New Perspectives on Gender, Urbanism, Cultures, Indigenous Peoples, and Ecology*, edited by Thomas D. Hall, pp. 69–82. Lanham: Rowman and Littlefield.
- Sigmundsson, Svavar. 1979. "Íslensku staða-nöfnin." *Íslenskt mál og almenn málfræði* 1: 238–48.
- Sigurbjörnsson, Björn. 2000. "Farming: Introduction." In *Aspects of Arctic and Sub-Arctic History*, edited by Ingi Sigurðsson and Jón Skaptason, pp. 102–25. Proceedings of the International Congress on the History of the Arctic and Sub-Arctic Region, Reykjavík, 18–21 June 1998. Reykjavík: University of Iceland Press.
- Sigurgeirsson, Magnús Á. 2009. *Fornleifarannsóknir í Skagafirði 2009: Hólar í Hjaltadal, Kolkuós og Keldudalur – Greining gjóskulaga*. Unpublished Report from Vöktunar- og viðbúnaðarsviði Geislavarna ríkisins.
- Sigurðardóttir, Sigríður. 2008. *Building with Turf*. Sauðárkrúkur: Byggðasafn Skagfirðinga.
- Sigurðsson, Gísli. 2004. *The Medieval Icelandic Saga and Oral Tradition: A Discourse on Method*. Cambridge, Mass.: Harvard University Press.
- Sigurðsson, Jón Viðar. 1989. *Frá Goðorðum Til Ríkja*. Reykjavík: Bókaútgáfa Menningarsjóðs.
- . 1995. "The Icelandic Aristocracy after the Fall of the Free State." *Scandinavian Journal of History* 20, no. 3: 153–66.

- . 1999. *Chieftains and Power in the Icelandic Commonwealth*. Translated by Jean Lundskaer-Nielsen. Odense: Odense University Press.
- . 2006. "Samskipti íslenskra biskupa við útlenda yfirboðara á öldum áður." In *Saga Biskupsstólanna, Skálholt 950 ára- 2006- Hólar 900 ára*, edited by Gunnar Kristjánsson, pp. 491–515. Reykjavík: Bókaútgáfan Hólar.
- . 2007. "Changing Layers of Jurisdiction and the Reshaping of the Icelandic Society c. 1220–1350." In *Communities in European History: Representations, Jurisdictions, Conflicts*, edited by Juan Pan-Montojo and Frederik Pedersen, pp. 179–93. Pisa: Pisa University Press.
- . 2008. *Det norrøne samfunnet. Vikingen, kongen, erkebiskopen og bonden*. Oslo: Pax Press.
- Simpson, Ian, W. Paul Adderley, Garðar Guðmundsson, Margrét Hallsdóttir, Magnús Á. Sigurgeirsson, and Mjöll Snædóttir. 2002. "Soil Limitations to Agrarian Land Production in Premodern Iceland." *Human Ecology* 30, no. 4: 423–43.
- Simpson, Ian, Garðar Guðmundsson, Amanda Thomson, and Jonathan Cluett. 2004. "Assessing the Role of Winter Grazing in Historic Land Degradation, Mývatnssveit, Northeast Iceland." *Geoarchaeology: An International Journal* 19, no. 5: 471–502.
- Sindbæk, Søren. 2006. "The Small World of Vikings: Networks in Early Medieval Communication and Exchange." *Norwegian Archaeological Review* 40, no. 1: 59–74.
- . 2007. "Networks and Nodal Points: The Emergence of Towns in Early Viking Age Scandinavia." *Antiquity* 81: 119–32.
- Sinopoli, Carla. 2003. "Echoes of Empire: Vijayanagara and Historical Memory, Vijayanagara as Historical Memory." In *Archaeologies of Memory*, edited by Ruth van Dyke and Susan Alcock, pp. 17–33. Oxford: Blackwell.
- Small, David. 1999. "Mycenaean Politics: States or Estates?" In *Rethinking Mycenaean Palaces: New Interpretations of an Old Idea*, edited by Michael Galaty and William Parkinson, pp. 43–7. Cotsen Institute of Archaeology Monograph 41. Los Angeles: University of California Press.
- Smith, Kevin P. 1995. "Landnám: The Settlement of Iceland in Archaeological and Historical Perspective." *World Archaeology* 26, no. 3: 329–47.
- . 2005. "Ore, Fire, Hammer, Sickel: Iron Production in Viking Age and Early Medieval Iceland." In *De Re Metallica: Studies in Medieval Metals*, edited by Robert Bork, pp. 183–206. AVISTA Studies in the History of Medieval Technology, Science, and Art, vol. 4. Aldershot: Ashgate Press.
- Smith, Michael E. 1987. "Household Possessions and Wealth in Agrarian States: Implications for Archaeology." *Journal of Anthropological Archaeology* 6: 297–335.
- Smith, Kevin P. and Jeffery R. Parsons. 1989. "Regional Archaeological Research in Iceland: Potentials and Possibilities." In *The Anthropology of Iceland*, edited by E. Paul Durrenberger and Gísli Pálsson, pp. 179–202. Iowa City: University of Iowa Press.

- Snow, C.P. 1959. *The Two Cultures and the Scientific Revolution*. New York: Cambridge University Press.
- Sørensen, Preben Meulengracht. 1992. "Some Methodological Considerations in Connection with the Study of the Sagas." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 27–41. Enfield Lock: Hisarlik Press.
- Spencer, Charles. 1998. "A Mathematical Model of Primary State Formation." *Cultural Dynamics* 10, no. 1: 5–20.
- Stanish, Charles. 1997. "Nonmarket Imperialism in the Prehispanic Americas: The Inka Occupation of the Titicaca Basin." *Latin American Antiquity* 8, no. 3: 195–216.
- Steblinkamenskij, M.I. 1973. *The Saga Mind*. Odense: Odense University Press.
- Stefánsson, Magnús. 2000. *Staðir og Staðmál: Studier i Islandske Egenkirkelige og Beneficialrettslige Forhold i Middelalderen 1*. Bergen: Historisk Institutt Universitetet i Bergen.
- Stein, Gil. 1999. *Rethinking World-Systems: Diasporas, Colonies, and Interaction in Uruk Mesopotamia*. Tucson: Arizona University Press.
- . 2002a. "Colonies without Colonialism: A Trade Diaspora Model of Fourth Millennium B.C. Mesopotamian Enclaves in Anatolia." In *The Archaeology of Colonialism*, edited by C.L. Lyons and J.K. Papadopoulos, pp. 27–64. Los Angeles: Getty Research Institute.
- . 2002b. "From Passive Periphery to Active Agents: Emerging Perspectives in the Archaeology of Interregional Interaction." *American Anthropologist* 104, no. 3: 903–16.
- , ed. 2005. *The Archaeology of Colonial Encounters*. Santa Fe: School of American Research.
- Stein, Julie and William Farrand. 2001. *Sediments in Archeological Context*. Salt Lake City: University of Utah Press.
- Steinberg, John. 2002. *Interim Report of the Skagafjörður Archaeological Settlement Survey 2001*. Los Angeles: Costen Institute of Archaeology, University of California.
- . 2003. "The Viking Age Long-House at Glaumbaer, Skagafjörður, Northern Iceland." *Antiquity* 77: 295, <http://antiquity.ac.uk/ProjGall/Steinberg/Steinberg.html>.
- . 2004a *Report of the Skagafjörður Archaeological Settlement Survey, 2002*. Los Angeles: Costen Institute of Archaeology, University of California.
- . 2004b *Report of the Skagafjörður Archaeological Settlement Survey, 2004*. Los Angeles: Costen Institute of Archaeology, University of California.
- . 2005. *Report of the Skagafjörður Archaeological Settlement Survey, 2005*. Boston: Fiske Center for Archaeological Research, University of Massachusetts.
- Steinberg, John and Douglas Bolender. 2004. "Rannsóknir á búsetumínum í Skagafirði (Settlement pattern analysis in Skagafjörður)." *Árbók hins íslenska fornleifafélags* 2002–2003: 107–30.

- . 2005. "The Skagafjörður Archaeological Settlement Survey: Methodology and Results of the First Two Years." *Árbók hins íslenska fornleifafélags*.
- Steindórsson, Steindór, Þor Magnússon, and Ásgeir S. Björnsson. 1987. *Daniel Bruun: Íslenskt Þjóðlíf í þúsund ár*. Reykjavík: Bókaútgáfan Örn Og Örygur Hf.
- Stone, Glenn Davis and Christian E. Downum. 1999. "Non-Boserupian Ecology and Agricultural Risk: Ethnic Politics and Land Control in the Arid Southwest." *American Anthropologist* 101, no. 1: 113–28.
- Stötter, J., M. Wastl, C. Caseldine, and T. Häberle. 1999. "Holocene Palaeoclimatic Reconstruction in Northern Iceland: Approaches and Results." *Quaternary Science Reviews* 18: 457–74.
- Straussfogel, Debra. 2000. "World-Systems Theory in Context of Systems Theory: An Overview." In *A World-Systems Reader: New Perspectives on Gender, Urbanism, Cultures, Indigenous Peoples, and Ecology*, edited by Thomas D. Hall, pp. 143–68. Lanham: Rowman and Littlefield.
- Strömbäck, Dag. 1975. *The Conversion of Iceland: A Survey*. Translated by Peter Foote. London: Viking Society for Northern Research, University College London.
- Sturlunga saga. 1988. Edited by Bergljót Kristjánsdóttir, Bragi Halldórsson, Gísli Sigurðsson, Guðrún Ása Grímsdóttir, Guðrún Ingólfsdóttir, Jón Torfason, Sverrir Tómasson, and Örnólfur Thorsson. Reykjavík: Svart á hvítu.
- . 1970. Translated by J. McGrew. New York: Twayne Publishers.
- Sveinbjarnardóttir, Guðrún. 1991. "A Study of Farm Abandonment in Two Regions of Iceland." In *Environmental Change in Iceland: Past and Present*, edited by J.K. Maizels and C. Caseldine, pp. 161–77. Dordrecht: Kluwer.
- . 1992. *Farm Abandonment in Medieval and Post-medieval Iceland: An Interdisciplinary Study*. Oxbow Monograph 17. Oxford: Oxbow Books.
- Sveinbjarnardóttir, Guðrún, Kerry-Anne Mairs, Mike J. Church and Andrew Dugmore. 2006. "Settlement History, Land Holdings and Landscape Change, Eyjafjallahreppur, Iceland," in *Dynamics of Northern Societies*, edited by Jette Arneborg and Bjarne Grønnow, pp. 323–34. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, 10–14 May 2004. Copenhagen: National Museum Studies in Archaeology and History.
- Tainter, Joseph A. 1988. *The Collapse of Complex Societies*. Cambridge, Eng.: Cambridge University Press.
- Teitsson, Björn. 2006. "Um jarðeignir Hólastóls." In *Saga Biskups Stólanna: Skálholt-Hólar*, edited by Gunnar Kristjánsson, pp. 459–89. Reykjavík: Bókaútgáfan Hólar.
- Tetzschner, Rúna K. 2006. *Nytjar í nöfnum. Örnefni í nágrenni Hóla í Hjaltadal*. Supervised by Ragnheiður Traustadóttir and Svavar Sigmundsson. Ritröð Hólarannsóknarinnar. Reykjavík: Hólarannsóknin og Örnefnastofnun.
- Thorsteinsson, I., G. Olafsson, and G.M. van Dyne. 1970. "Range Resources in Iceland." *Journal of Range Management* 24: 86–93.

- Tilley, Charles. 1994. *A Phenomenology of Landscape: Places, Paths, and Monuments*. Oxford: Berg Press.
- . 1998. *Durable Inequality*. Berkeley: University of California Press.
- Tomasson, Richard F. 1980. *Iceland: The First New Society*. Minneapolis: University of Minnesota Press.
- Traustadóttir, Ragnheiður. 2002. *Fornleifarannsókn og greiningar á Hólum í Hjaltadal 2002*. Rannsóknarskýrslur Hólarannsóknarinnar 2002: 4. Háskólinn á Hólum.
- . 2003. "Hólarannsóknin 2002." *Grein í Lesbók Morgunblaðsins* 17.
- . 2004. *Fornleifarannsókn á Hólum í Hjaltadal 2004*. Rannsóknarskýrslur 2004:1.
- . 2005. *Fornleifarannsókn á Hólum árið 2005*. Rannsóknarskýrslur Hólarannsóknarinnar 2005: 1. Háskólinn á Hólum.
- . 2009. "Ekki í kot vísað." In *Fornleifarannsóknir styrktar af Kristnihátíðarsjóði 2001–2005*, edited by Guðmundur Ólafsson and Steinunn Kristjánsdóttir, pp. 16–29. Reykjavík: Þjóðminjasafn Íslands.
- Traustadóttir, Ragnheiður and Magnus Hellqvist. 2003. "Ísländska biskopssätets historia – skriven i jorden." *Populär arkeologi*.
- Traustadóttir, Ragnheiður and Guðný Zoëga. 2006. "Saga Hóla letruð í moldina." In *Saga Biskupsstólanna, Skálholt 950 ára- 2006- Hólar 900 ára*, edited by Gunnar Kristjánsson, pp. 699–722. Reykjavík: Bókaútgáfan Hólar.
- Traustadóttir, Ragnheiður, Jörgen Dencker, and Flemming Rieck. 2004. *Fornleifarannsókn á Kolkuósi árið 2004*. Rannsóknarskýrslur Hólarannsóknarinnar 2004: 7. Háskólinn á Hólum. Directed by Ragnheiður Traustadóttir.
- Tulinius, Torfi. 1992. "Inheritance, Ideology, and Literature: *Hervarar Saga ok Heiðreks*." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gísli Pálsson, pp. 147–60. Enfield Lock: Hisarlik Press.
- Tylecote, Ronald F. 1987. *The Early History of Metallurgy in Europe*. London: Longman.
- van Dyke, Ruth and Susan Alcock, eds. 2003. *Archaeologies of Memory*. Malden: Blackwell.
- Vansina, Jan. 1995. "Historians, are Archaeologists Your Siblings?" *History in Africa* 22: 369–408.
- Vésteinsson, Orri. 1998. *Forleifarannsókn á Neðra Ási í Hjaltadal 1998*. Reykjavík: Fornleifastofnun Íslands FS068-98173.
- . 2000a. "Archaeology of Landnán: Early Settlement in Iceland." In *Vikings: The North Atlantic Saga*, edited by William Fitzhugh and Elisabeth I. Ward, pp. 164–74. Washington, D.C.: Smithsonian Institution Scholarly Press.
- . 2000b. *The Christianization of Iceland: Priests, Power, and Social Change, 1000–1300*. Oxford: Oxford University Press.
- . 2001. "Patterns of Settlement in Iceland: A Study in Prehistory." *Saga-Book* XXV: 1–29.

- . 2005a. "Archaeology of Economy and Society." In *A Companion to Old Norse-Icelandic Literature and Culture*, edited by Rory McTurk, pp. 1–6. Oxford: Blackwell.
- . 2005b. "The Formative Phase of the Icelandic Church ca. 900–1240 A.D." In *Church Centres: Church Centres in Iceland from the 11th to the 13th Century and their Parallels in Other Countries*, edited by Helgi Þorláksson, pp. 71–81. Reykholzt: Snorrastofa, Cultural and Medieval Centre.
- . 2006. "Central Areas in Iceland." In *Dynamics of Northern Societies*, edited by Jette Arneborg and Bjarne Grønnow, pp. 307–21. Proceedings of the SILA/NABO Conference on Arctic and North Atlantic Archaeology, Copenhagen, 10–14 May 2004. Copenhagen: National Museum Studies in Archaeology and History.
- Vésteinsson, Orri and Ian Simpson. 2004. "Fuel Utilisation in Pre-industrial Iceland: A Micro-morphological and Historical Analysis." In *Current Issues in Nordic Archaeology: Proceedings of the 21st Conference of Nordic Archaeologists, 6–9 September 2001, Akureyri Iceland*, edited by Garðar Guðmundsson, pp. 181–87. Reykjavík: Society of Icelandic Archaeologists.
- Vésteinsson, Orri, Thomas McGovern, and Christian Keller. 2002. "Enduring Impacts: Social and Environmental Aspects of Viking Age Settlement in Iceland and Greenland." *Archaeological Islandica* 2: 98–136.
- Vilhjálmsson, Vilhjámur Örn. 1991. "The Application of Dating Methods in Icelandic Archaeology." *Acta Archaeologica* 61: 97–107.
- Waateringe, W. Groenman-van and M. Robinson. 1988. *Man-Made Soils*. Oxford: Archaeopress.
- Wada, K., O. Arnalds, Y. Kakuto, L.P. Wilding, and C.T. Hallmark. 1992. "Clay Minerals of Four Soils Formed in Eolian and Tephra Materials in Iceland." *Geoderma* 52: 351–65.
- Wallace, Birgitta. 2000. "The Viking Settlement at L'Anse aux Meadows." In *Vikings: The North Atlantic Saga*, edited by William Fitzhugh and Elisabeth Ward, pp. 208–16. Washington, D.C.: Smithsonian Institution Scholarly Press.
- Wallerstein, Immanuel. 1974. *The Modern World-System*. New York: Academic Press.
- Weber, Max. 1930 [1904]. *The Protestant Ethic and the Spirit of Capitalism*. London: Allen & Unwin.
- Wemple, Suzanne Fonay. 1981. *Women in Frankish Society: Marriage and the Cloister 500 to 900*. Philadelphia: University of Pennsylvania Press.
- Werthsch, James V. 2002. *Voices of Collective Remembering*. Cambridge, Eng.: Cambridge University Press.
- Whaley, Diana. 1997. "Troublesome Poets in the Courts of Scandinavia." In *Sagas and the Norwegian Experience*, edited by J.R. Hagland, pp. 663–74. Reprints from the 10th International Saga Conference. Trondheim: Center for Middelalderstuder, Norwegian University of Science and Technology.

- . 2000. "A Useful Past: Historical Writing in Medieval Iceland." In *Old Icelandic Literature and Society*, edited by Margaret Clunies Ross, pp. 161–202. Cambridge, Eng.: Cambridge University Press.
- Wilder, Gerrit Parmile. 1971 [1928]. *The Breadfruit of Tahiti*. Bernice P. Bishop Museum Bulletin 50.
- Wiley, Gordon. 1953. *Prehistoric Settlement Patterns in the Virú Valley, Peru*. Washington, D.C.: Bureau of American Ethnology Bulletin, 155.
- Wright, Henry T. 1994. "Prestate Political Formations." In *Chiefdoms and Early States in the Near East: The Organizations Dynamics of Complexity*, edited by G. Stein and M. Rothman, pp. 67–84. Monographs in World Archaeology, no. 18. Madison: Prehistory Press.
- . 1998. "Uruk States in Southwestern Iran." In *Archaic States*, edited by Gary Feinman and Joyce Marcus, pp. 173–97. Santa Fe: School of American Research.
- Wubs-Mrozewicz, Justyna. 2008. *Traders, Ties and Tensions: The Interaction of Lübeckers, Overijsslers and Hollanders in Late Medieval Bergen*. Hilversum: Verloren Publishers.
- Würth, Stephanie. 2005. "Historiography and Pseudo-History." In *A Companion to Old Norse-Icelandic Literature and Culture*, edited by Rory McTurk, pp. 155–72.
- Zoëga, Bryndís. 2005. *Landnotkun og byggðapróun í Hjaltadal og nágrenni frá 970–1550*. B.S. Ritgerð. Háskóli Íslands (University of Iceland).
- Zoëga, Guðný. 2003. *Fornleifakönnun vegna vega*. Sauðárkrókur: Byggðasafn Skagfjörðinga.
- . 2004 *Fornleifaskráning vegna aðal- og deiliskipulags í Fjarðabyggð*. Sauðárkrókur: Byggðasafn Skagfjörðinga.
- . 2005. *Eyðibýgg' of afdalir Skagafjarðar I*. Sauðárkrókur: Byggðasafn Skagfjörðinga.
- . 2009a. "Fólkið í Keldudal." In *Endurfundir: Fornleifarannsóknir styrktar af Kristnihátíðarsjóði 2001–2005*, edited by Guðmundur Ólafsson and Steinunn Kristjánsdóttir, pp. 30–43. Reykjavík: Þjóðminjasafn Íslands.
- . 2009b. *Kagfirska kirkjurannsóknin – framvinduskýrsla 2009*. December 2009/95. Sauðárkrókur: Byggðasafn Skagfjörðinga.
- Zoëga, Guðný and Ragnheiður Traustadóttir. 2007. "Keldudalur: A Sacred Place in Pagan and Christian Times in Iceland." In *Cultural Interaction between East and West: Archaeology, Artefacts and Human Contacts in Northern-Europe*, edited by Ulf Fransson, Marie Svedin, Sophie Bergerbrant, and Fedir Androschuk, pp. 225–30. Stockholm: University of Stockholm.
- Zoëga, Bryndís and Guðný Zoëga. 2004. *Neðri-Ás í Hjaltadal: Fornleifaskráning Vegna Deiliskipulags*. Sauðárkrókur: Byggðasafn Skagfjörðinga.
- . 2007. *Fornleifaskráning í Skagafirði: Stóragerði, Kolkuós, Brinnes, Bakki of Skarð*. Sauðárkrókur: Byggðasafn Skagfjörðinga.

- Zutter, Cynthia M. 1991. "Icelandic Plant and Land-Use Patterns: Archaeobotanical Analysis of the Svalbarð Midden (6706–60), Northeastern Iceland." In *Norse and Later Settlement and Subsistence in the North Atlantic*, edited by Christopher Morris and D. James Rackham, pp. 139–48. Glasgow: University of Glasgow Press.
- Þórarinnsson, Sigurdur. 1980. "Tephrochronology and Its Application in Iceland." In *Geology of the European Countries: Denmark, Finland, Iceland, Norway, Sweden*, edited by Jean Dercourt, pp. 162–5. London: Graham & Trotman.
- Þorláksson, Helgi. 1979. "Miðstöðvar stærstu byggða: Um forstígg þéttbýlismyndunar við Hvítá á hámiðöldum með samanburð við Eyrar, Gásar og erlendar hliðstæður." *Saga* 17: 125–64.
- . 1992. "Social Ideals and the Concept of Profit in Thirteenth-Century Iceland." In *From Sagas to Society: Comparative Approaches to Early Iceland*, edited by Gisli Pálsson, pp. 231–45. Enfield Lock: Hisarlik Press.
- . 2000. "The Icelandic Commonwealth Period: Building a New Society." In *Vikings: The North Atlantic Saga*, edited by William W. Fitzhugh and Elisabeth I. Ward, pp. 175–85. Washington, D.C.: Smithsonian Institution Scholarly Press.
- . 2001. "Enterprising Explores in the North Atlantic." In *Voyages of Exploration in the North Atlantic from the Middle Ages to the XVIIth Century*, edited by Anna Agnarsdóttir, pp. 13–28. Reykjavík: University of Iceland.
- . 2005. "Why Were the 12th Century Staðir Established?" In *Church Centres: Church Centres in Iceland from the 11th to the 13th Century and Their Parallels in Other Countries*, edited by Helgi Þorláksson, pp. 127–55. Reykholt: Snorrastofa, Cultural and Medieval Centre.
- . 2007. "Walruses at Reykjavík." In *Reykjavík 871 ± 2*, pp. 34–5. Reykjavík: Minjasafn Reykjavíkur.

Index

- Adam of Bremen 282n107, 288
Aegean societies 74–76, 313n
Alþingi 17–19, 19n46, 22, 25, 89, 118
Archaeological sites in Hjaladalur
 Ás (Efri-Ás and Neðri-Ás) 133, 134, 134n4,
 138–145, 147, 152, 156, 200, 250n, 259,
 259n14
 Geitagerði 53, 56, 63, 65, 146, 168–175,
 180, 259n17
 Hof 53, 56, 63, 132–134, 134n4, 138–139,
 145–180, 213, 231, 235, 250n, 287,
 287n119, 288n120
 Hólar 105, 114n, 120–122, 132, 134, 134n4,
 138, 140n19, 145–146, 151, 151n, 153n38, 156,
 157n, 163, 164n47, 168–169, 173–176, 180,
 185, 188, 188n, 200, 214, 214n, 232, 235n89,
 237, 250n, 255–256, 259n17, 281–282,
 287–289, 293–295, 301, 322n58, 324, 326
 Hvammur 146, 163–169, 180, 259n14,
 259n16
 Kálfsstaðir 146, 156–163, 168, 176, 180,
 250n, 259n14, 259n16
 Kollugerði 146, 173–176, 180, 205, 259n17
 Nautabú 130, 146, 152–156, 165, 168, 176,
 180, 186
 Reykir 130, 137, 163, 176, 176n50, 178–179
Archaeological sites in Iceland
 Aðalstræti 261
 Bessastaðir 21
 Eyjafjörður 178, 288, 322n58
 Flatatunga 250n, 251, 268
 Flugumýri 250n, 321, 321n56
 Gásir 274, 288, 303n146
 Geldingholt 251
 Glaumbær 53, 56, 62, 63, 65, 120n29, 196
 Goðdalir 250n, 251, 268, 287–288, 322n58
 Granastaðir 277
 Grímsey 286, 286n16, 287
 Hæringsbúðar 257, 268
 Hegranesþing 257
 Herjólfsdalur 21
 Hofstaðir (Mývatnsveit) 212, 279–280
 Keldudalur 149
 Kolbeinsdalur 132, 138, 200, 250n, 322n58
 Mývatn 29, 48–53, 268n46, 279
 Ormsstaðir 209–210
 Reykholt 295
 Reykjavík 21, 261, 261n32
 Reynistaður 53, 62–65, 218, 250n, 322n58
 Skálholt 281, 282, 282n, 288
 Sleitustaðir 132, 138, 200
 Steinsstaðir 53, 56, 63
 Stöng 116n24
 Stóra Akra 250n, 251–252, 321
 Stóra Seyla 149, 250–251, 268,
 322n58
 Tjarnargata 261
 Tungusveit 53, 250b, 252, 289
 Viðmýri 250n, 268
 Þorleifstaðir 250n, 251–252
Archaeological sites in Viðvíkursveit
 Bakki 186, 218–223, 231–232, 232n87, 259n14
 Brimnes 232, 232n87
 Fornistekkur 161n, 186, 200–205, 217,
 231–232, 259n14
 Hofstaðir 186, 223–231, 250n
 Hólakot 138, 140, 161n, 186–200, 231–232,
 259n14, 259n16
 Hrísháls 132
 Kolkuós 105, 114n, 132, 134, 134n4, 138,
 149, 181, 185–186, 205, 218, 223, 231–232,
 257, 262, 267–268, 274, 288, 301, 312, 321
 Langhús 161n, 186, 205–213, 217, 231–232,
 259n14
 Miklihóll 161n, 186, 213–218, 231–232,
 259n14, 259n16
 Svaðastaðir 137, 231, 231n
 Viðvík 130–134, 134n4, 137–139, 152,
 180–186, 188, 231–235, 235n89, 250n, 321,
 321n56

Entries are listed according to the following alphabetic order: a, b, c, d, ð, e, f, g, h, l, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, þ. Just for the index, and not the bibliography, Icelandic names are alphabetized under first names. For example, Ari Þorgilsson rather than Þorgilsson, Ari.

- Ari Þorgilsson 18, 19n46, 78, 263
 Árni Magnússon 121, 121n32
 Ásbirningar family 269, 294
- Bolin, Sture 12–13
Bondi (*Bændr* pl.) 19–22, 22n66
 Braudel, Fernand 308–311
 British Isles 24, 31n18, 36n40, 44, 186, 259–260, 271, 272n62, 318
Buchprosa (book-prose) 77, 77n33
 Byzantine Empire 12–15, 259, 315
- Castells, Manuel 88, 304–311, 321
 Catholic Church 8, 12, 281, 288n124, 293, 325
 Charlemagne 12–16
 Christianity in Iceland 10–12, 17, 25–26, 48, 99, 114n, 117, 121–122, 134, 138n14, 139, 144–145, 174, 185, 224–226, 256–257, 273, 280–286, 288, 288n124, 289, 292n130, 294–295, 299–301, 317–318, 324–326
- Commercial cloth production
 Cloth as currency (*Öln*) 273
 Cottage industry weaving 91, 197, 197n64, 200, 231, 254, 274–275
 Flax cloth 197, 197n64, 199–200, 231
 Fine cloth (*Hafnarvaðmál*) 272
 Homespun woolen cloth (*Vaðmál*) 271–275
Mórent cloth 272
 Professional weavers (*Búalög*) 272
Röggvarfildir coats 272
 Sheep/wool production 18, 20, 24, 40, 43, 49, 63–66, 116, 139, 146, 153, 156, 163, 188, 197–200, 225, 235n90, 246–247, 262, 271–272, 272n56, 274–280, 290–292, 303, 311–316, 323–325
Varafildir coats 272
See also Economic practices in Iceland
 ‘Congested countryside’ phenomenon 318
- Denmark 11, 14, 120–121, 121n32, 292, 300, 316
- Economic practices in Iceland
 Aurar (pl.) Eyir (sing.) ounce of silver 263, 263n37
 Ecclesiastical economy 292–301
 Falcon trade 252, 260–264, 271, 303
 Fox trade 20, 40, 252, 260
 Frankish denier 12
- Medieval economy 271, 240–248, 259, 269–292, 302–303, 311, 316
 Merchant-farmers 246, 280
Merkelapper (mercantile labels) 264
 Muslim silver 12–13
 Redistribution (chiefly gift-giving) economy 13–17, 22–23, 30–38, 100–101, 109, 146–147, 243, 260, 268, 271, 317–318
 Subsistence economy (cattle and horse husbandry) 6, 19–23, 31–42, 64, 104, 116, 126, 139, 147, 151–156, 161–163, 168, 205–211, 239, 243–245, 256, 277, 287, 295, 313, 328
 Sulfur trade 252, 260–262, 303n146, 319
 Viking Age economy 13, 32, 145, 185–186, 240, 243, 246–248, 259–272, 284, 288, 302–303, 313, 316, 323–325
 Walrus ivory trade 24, 186, 260–264, 271, 303, 303n146, 311, 319
Woden Monster Sceatta 13
See also Environment of Iceland and its impact on economic practices;
 Commercial cloth production
- Egypt 74–75, 86, 260, 318n52
- Environmental degradation and its constraints on Icelandic society
 Anthropogenic landscapes 28, 37, 40–52, 66
 Blanket bogs 62, 164, 188
 Birch forests 40–41, 47–49, 63, 131, 138, 146, 168, 186, 205, 225
 Bog soils 38–40, 61, 126, 139, 148, 161, 164–165, 174, 188–189, 200, 205–206, 214–215, 252, 290
 Carrying capacity 38, 43, 47–48
 Ovigenic landscape (overgrazing) 28–29, 41, 64, 243, 279n93
 Resource scarcity 6, 28–37, 47, 66, 244, 312
 Soil erosion rates 28–30, 39, 41–67, 124–125, 151–153, 164, 169, 176, 188, 201, 218, 220, 243
- Environment of Iceland and its impact on economic practices
 Aeolian soils 53–61, 123, 132, 140, 143, 155, 161, 163, 171, 192, 195, 253n
 Andosols 38–39, 51–53, 57, 61–65, 290, 323
 Barley cultivation 153, 155–156
 Bog iron ore 147, 211–213, 225, 232, 252
 Buffer resources 21, 40, 313

- Erosion resistant zones 53–66, 130–132, 145, 167–174, 214, 217, 243, 253n, 323
- Fjord valley systems 105, 122, 130–134, 145, 156, 163, 213, 235, 239–240
- Grain cultivation and trade 40, 104, 186, 243, 262, 271–272, 312
- Grazing land 41, 108, 112n19, 115, 126, 147, 151–153, 161–164, 176, 180, 217, 278–280, 291
- Hay/grass agriculture 20–21, 29–30, 40–46, 53, 62–68, 115, 137–139, 147, 151–156, 164–165, 176, 224–225, 243, 302, 323
- Livestock farming 18–20, 40–43, 49, 63–64
- Resource niches by ecological region 37, 118, 130, 240, 303
- Soil deposition rates 55–65, 125–127, 140, 155, 161, 167–175, 195, 198, 208, 211, 220n, 226, 253n
- Soil Organic Content (SOC) 60–63, 323
- Soil texture analysis 55–65, 127, 214
- Winter grazing 40–42
- See also* Economic practices in Iceland
- Feuding 23, 25, 67, 101
- Frankish (Carolingian) Empire 3, 12–15, 91–92, 260, 316
- Fredrick II 260
- Freiprosa* (free-prose) 76, 77n33
- Fried, Morton 2, 303–306
- Gamli Sáttmáli* 78–79, 292n130
- Gerald of Wales 260n22
- Giraldus Cambrensis 260
- Gissurarsáttmáli* 78–79
- Gissur Þorvaldsson 25, 78–79
- Godfred of Heðeby 12–16
- Goði* (*Goðar* pl.) 4, 10, 16, 18–30, 41, 42, 53, 66–69, 79, 81, 89–90, 100–109, 118, 128–134, 138n14, 147, 151, 239, 243, 256, 260, 268–322
- Goðorð* (chieftain positions) 269
- Goody, Jack 88–89
- Goths 11
- Greenland 17, 24, 37n, 42, 45, 48n109, 261–265
- Guðbrandur (Bishop) 169n49
- Guðmundr goða 294
- Hákon IV 79
- Hansa 212, 300
- Harold Finehair 16
- Harun al-Rashid 12–16
- Hawaii 33–38, 65, 269n47
- Heðeby 14–15
- Herschend, Frands 109
- Hilárius Illugason 288
- Hjalti Skálþsson 133, 138, 147, 288n120
- Hreppur* 46
- Ibn Said al-Maghribi 260
- Illugi Bjarnason 288
- Icelandic Civil War 4, 18, 25–28, 67–70, 105
- Impact of climate on North Atlantic societies
- Drift ice 42–45
- GISP ice core records 43–44
- Little Climatic Optimum (medieval warming trend) 20n53, 41–44
- Little Ice Age 42, 66, 105n3, 43–44
- Temperature change 20n53, 29, 38–45, 108, 267
- See also* Environmental degradation and its constraints on Icelandic society
- Inca Empire 73
- Ireland 16, 19n50, 20, 20n50, 260
- Kamehameha 36
- kennings 88
- Kirkjugóðar* (church chiefs) 281
- Landnám package 21, 40
- Land registries
- Diplomatarium Islandicum* (18th c. A.D.) 121, 121n32, 122, 169n49, 273, 288n122
- Hólastóll* (1388 A.D.) 121, 140n19, 153n38, 157n42, 163n45, 188n, 214, 214n77
- Hólastóll* (1449 A.D.) 121, 153n38, 157n42, 163n45, 188n, 214n77, 218, 235n89
- Hólastóll* (1550 A.D.) 121, 153n38, 157n42, 163n45, 188n, 214n77, 218n78
- Jarðabók* (18th c. A.D.) 121, 188, 218
- Jarðatal* Johnsen (18th c. A.D.) 120–121
- Máldaginn* (1318, 1388 A.D.) 121
- Reynistaður Land Inventory* (1295 A.D.) 218
- L'Anse aux Meadows 80

- Mágnus VI 79
- Marriage practices in Iceland
- Bride price 93
 - Christian law concerning marriage 100
 - Divorce 93–100
 - Dowry 93–95
 - Inheritance 11, 18, 25, 71, 90, 96, 100–102, 274
 - Jafnræði* (“equal match”) 97–98
 - Kaufeþe* 91
 - Raubeþe* 92
- Marquesas 34–37
- Melanesia 31–33
- Muslim Empire 12–15, 259, 262, 315
- Network societies 304
- Non-residential sites (activity areas)
- Assembly sites (*þing*) 115, 118, 122, 257, 268, 268n45, 276n79, 301
 - Charcoal-making workshops 126, 137, 140, 144, 254
 - Temple (*hof*) 147, 147n27, 224–225
 - Ironworking (*smíðja* [open-air], *raudasmíðja* [indoor]) 115–117, 126, 137, 144, 195, 200, 209–213, 231, 254
 - Pagan grave (*kuml*) 115–117, 122, 185
 - Parish church (*þændakirkja*) 257n, 288, 324
 - Prayer house (*þænhús*) 218, 257
 - Sheiling (*sel*) 115–118, 122, 180, 254–255, 278, 290–291, 291n
 - Sheep roundup/pen (*kvíar*, *réttir*, *stekkur*) 126, 137, 140, 153n39, 161, 164, 164n46, 172, 175–176, 192, 198, 201, 203–204, 214, 216, 225–226, 235n90, 258
 - Storage (*bú*) 115, 176, 256
 - Trading harbors 17, 105, 114n, 115, 117, 122, 134, 185, 205, 218, 223, 231–232, 257, 263, 268, 274, 283, 301, 312, 321
 - Weaving huts/pithouses (*jarðhús*) 196–197, 197n62–64, 251n, 254
- See also Research methodology
- Norway 10, 16–23, 28, 37, 40, 44, 68–96, 109, 156, 243–246, 261–264, 271–275, 286–295, 300, 302, 315–328
- Oral narratives 7, 17–18, 80, 90, 95, 98, 100, 102, 275
- Oxa Hjaltason 288, 288n120
- Páll Vídalín 121
- Pirenne, Henri 12–13
- Pirenne Thesis 12
- Polynesia 29–37, 68
- Price, Barbara 2, 303–306
- Primary texts
- De Arte Venandi Cum Avibus* 260
 - Biskupa sögur* 17, 17n40, 294–295
 - Eyrbyggja saga* 212, 212n70
 - Beowulf* 82, 88
 - Franish Annals* 14
 - Grágás* 18, 22–23, 25, 46, 89, 93, 95, 97–101, 117, 273–275, 281
 - Grettir's saga* 80
 - Hákonar saga Hákonarsonar* 79
 - Hallfred Troublesome Poet* 95
 - Heimskringla* 17, 87, 286
 - Hervarar saga* 100–101
 - Hrafnkell's saga* 16
 - Hungrvaka* 282n, 288
 - Íslendingabók* 17–19, 19n46, 87
 - Íslendingasögur* (*family sagas*) 17, 22, 69–70, 76–81, 90, 92–102
 - Jon's saga* 288
 - Landnámabók* 17–19, 78, 92, 132, 134, 138, 138n14, 147, 153, 156, 180, 185, 224, 224n83
 - Laxdæla saga* 93–94, 98, 100
 - Njal's saga* 93–96
 - Samtíðarsögur* (*contemporary sagas*) 17–18, 80, 90, 95, 98, 100, 102, 275
 - Sturlunga saga* 18, 25, 69–70, 81, 90, 269, 275, 276n78
- Research methodology
- Coring protocols 105, 115–116, 123–127, 132
 - Ground Penetrating Radar (GPR) 123, 123n39
 - Hólar Project 114n, 138, 145, 145n20, 185n55
 - Multiregional Site Registry (MSR) 105, 107, 114, 120–123, 128, 238, 240–241, 247–248, 248n, 250, 254, 257, 264, 267, 280, 284, 305
 - Pedestrian field survey 105, 123, 137, 140, 157, 161, 163–164, 169, 174
 - Settlement pattern analysis 55n125, 105, 107–108, 111–112, 118, 128–133, 231, 237–240, 245, 247, 262, 265, 268, 280, 284, 286–292, 301–303, 312–319

- Site destruction 171, 137, 139, 139n17,
147–148, 153–154, 156–157, 168, 174,
187–188, 201, 205, 214, 225
- Skagafjörður Landscape Project (SLP)
9–10, 105, 130, 239, 247–248, 257–258
- Subsurface coring survey 105, 116, 127,
134, 137–237, 240, 252, 264, 287n119
- Target excavations 115, 127, 134n4, 138,
146, 148, 185n53, 186, 192, 199
- Tephrochronology 55, 119, 126, 206
- Residential sites
- Benefice farms (*staðir*) 283, 324
 - Chieftain (*goðar*) farms/centers 21, 109,
116n24, 176, 180, 231, 250–254, 265, 268,
281–290, 290n127, 320–324
 - Free men/aristocratic (*bændr*) farms 21,
116, 119, 121, 163, 214, 219, 231, 252, 254,
287–290
 - Húsmannsbýli* 188
 - Kot* 188, 200
 - Smallholder/tenant farms
(*hjáleiga*) 26–27, 65, 188, 200, 245,
247, 259, 276, 290, 290n128, 295, 299,
299n141, 300, 303
 - See also* Research methodology
- Ríki* (political territories) 26, 37, 43, 269
- Roman Empire 1, 11–15, 25, 86, 91, 261, 294
- Ruric 14
- Saussure, Ferdinand de 85
- Saxons 272n62, 316
- Scandinavia 3–30, 65–71, 91, 111, 147, 186,
245–246, 254, 259, 263–264, 271,
292n130, 300–302, 312–325
- Settlement of Iceland Models
- Aud the Deep Minded Approach 109
 - Skalagrim Approach 109
 - See also* State formation models
- Shetlands 16, 20, 263
- Slaves in Iceland 18–19, 19n50, 67, 78, 92, 96,
98, 100–104, 109
- Sleitu-Björn 132–133, 138n14
- Smaríke* 315
- Snorri Sturlusson 87
- Social memory 17, 77–79, 87–88, 120, 205
- Social network theory
- Branching out phenomenon 314
 - Clustered network 110–111, 114, 128, 130, 132,
134, 240, 243, 245, 248, 301, 309, 314, 319
 - Hubs (central places) 110–112, 114, 177, 251,
265, 267–268, 284, 287–288, 301, 309–310,
314, 318, 321, 322n58, 324–325, 328
 - Nodes 109–112, 132, 177, 284, 301–302, 307,
309–310, 314, 321
 - Scale-free network 110–112, 114, 128, 130,
132, 134, 235, 240–241, 247, 258, 295, 301,
309, 314, 319, 321–322
 - Small world effect 307, 308n15
 - Strength of weak ties 314
 - Strong ties 310, 314
 - Weak ties 310, 314
- Space-of-flows 307–311, 321, 324–325
- Staðarmál ruling 295
- State formation models
- Autarkic Model 10, 109, 128, 243–247,
265, 277, 284, 300
 - Autonomous Secondary State 10, 28–30,
66, 109, 243
 - Core-periphery models 71–73
 - Imperial Economy Model 10, 109, 128,
243–246, 265, 286, 300–302
 - Multiscalar models 72
 - Norse Economic Territory (NET) 10, 15,
109, 128, 243–247, 272, 292, 301–303, 311,
319, 323
 - Primary state formation 2–10, 28, 30, 66,
75, 305–306, 317, 327
 - Secondary state formation 1–11, 27–29,
36–37, 68–84, 103, 109, 128–134, 243,
258, 280–281, 291–292, 301–305
 - Synergistic Secondary State Model 8,
109–112, 246, 303–315, 322, 328
 - Trade diasporas 74, 74n23
 - World Systems Theory 69–75, 306–311
- Storgoðar* ('big chiefs') 26, 37, 43, 67, 269,
269n47, 323
- Sturla Sighvatsson 25
- Sturla Þóðarson 79
- Sweden 11, 132, 281
- Sýslumenn* (sheriffs) 68, 292
- Taxes
- Assembly site travel tax
(*Þingkfararkaup*) 22, 276n79
 - Landing fee (*Landaurar*) 263
 - Sheep tax (*Sauðakvöð*) 276, 276n78
 - Temple tax (*Hoftollr*) 22, 276n79
 - Tithe tax (*Tíund*) 26, 276, 281–283

- Teutons 11
- 'Two Cultures' debate 7, 328
- Viking hordes 12
- Viking merchants 13, 16, 23–24,
316n39
- Viking raids 11–13, 20, 35, 259, 271, 317
- Vinland 17, 24, 37n, 80
- Wallerstein, Immanuel 69–72
- Willey, Gordon 107
- Zipf's Law 319
- Pingmen* 19